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VOLUME 1

USAF SEARCH AND RESCUE
IN SOUTHEAST ASIA

1954 - 31 MARCH 1968

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AEROSPACE RESCUE AND RECOVERY SERVICE (MAC)
SCOTT AIR FORCE BASE, ILLINOIS 62225



REPLY TO
ATTN OF: XPX/Mr. Hardt/5871

18 DEC 1970

SUBJECT: Corrections to ARRS CORONA HARVEST Volumes I through VII

TO: ASI/INI
Maxwell AFB AL 36112

1. Reference is made to telecon between Mr. Hardt, ARRS/XPX, and Major Smith, ASI/INI, on 17 Dec 70. It is a pleasure to forward necessary corrections to ARRS CORONA HARVEST Volumes I through VII to assist your staff.
2. In accordance with INI message 082130Z Dec 70, the following page and pen and ink corrections will be made to ARRS CORONA HARVEST Volumes I through VII:
 - a. Volumes I, II, III and IV:

<u>Remove</u>	<u>Insert</u>
Page ii (Preface)	Page ii (Security Instructions)
	Page iia (Abstainer)
Page iv (Table of Contents)	Page iv (Table of Contents)
 - b. Volumes V, VI and VII:

<u>Remove</u>	<u>Insert</u>
Page iii (Abstainer)	Page iii (Abstainer)
2. The following pen and ink corrections will be made to Volumes I, II, III and IV:
 - a. Vol I, page viii; change total number of pages to read 407.
 - b. Vol II, page xii; change total number of pages to read 273.
 - c. Vol III, page xii; change total number of pages to read 276.
 - d. Vol IV, page viii; change total number of pages to read 200.

3. ARRS CORONA HARVEST Volumes I through VII will be stamped "FOR
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FOR THE COMMANDER

H. W. Wallace, Jr.

H. W. WALLACE, Jr., Colonel, USAF
DCS/Plans

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1. Vol I (pp. ii, iia and iv) (10 cys)
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R 818.204-6

CORONA HARVEST

Volume I

USAF SEARCH AND RESCUE

SOUTHEAST ASIA

1954 - 31 March 1968

HQ ARRS

DCS/PLANS

31 January 1969

PROJECT CORONA HARVEST
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Prepared by Lt Col Gordon W. Crozier

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INTRODUCTION

General O. P. Weyland once said that a "standing facet of the Korean War was the number of old lessons that had to be relearned. It appears that these lessons either were forgotten or were never documented, or if they were documented, were never disseminated." It is indeed fortunate that General Weyland and his colleagues appreciated the importance of recording the lessons learned in Korea because many of the tactics and techniques of that war and of World War II have been adopted to the present SEA conflict.

General Bruce K. Holloway, former USAF Vice Chief of Staff, recently stated, "Not everything in Southeast Asia is an adaptation of old methods. We have developed new tactics and techniques that capitalize on advanced hardware and reflect the experience of many thousands of combat missions. It is essential that both, adaptations of old techniques and newly developed tactics and methods be thoroughly documented for the future."

These, then are the reasons why the Air Force is presently conducting an evaluation of the effectiveness of airpower in Southeast Asia from 1954 until the cessation of hostilities. The code name for the project is "Corona Harvest." It has three specific objectives.

1. To evaluate the effectiveness of airpower in Southeast Asia.
2. To identify and describe the lessons learned.
3. To assess the validity of current Air Force and joint concepts/doctrine in light of these lessons.

This document has been prepared as a part of the overall Corona Harvest Study conducted by the Air University under the authority contained in AFR 55-15. Basic guidance is contained in "Project Corona Harvest Plan" dated 1 July 1967 published by the Aerospace Studies Institute, Air University, Maxwell AFB, Alabama.

The total report, because of the diversity of mission responsibility, has been addressed in four separate volumes as follows:

Volume I - USAF Search and Rescue in Southeast Asia.

Volume II - Joint Search and Rescue Control Center (JSARC).

Volume III - Local Base Rescue (LBR) in Southeast Asia.

Volume IV - Aircrew Recovery (ACR) in Southeast Asia.

The structure of Volume I varies from that followed in Volumes II, III and IV in that it does not adhere to the format outlined in Corona Harvest Operating Instruction 1, dated 1 November 1968.

Volume I was designed to reflect the chronological ARRS force buildup in Southeast Asia and the problems that were encountered as

mission responsibility increased. It will provide the reader with an overview of ARRS involvement in SEA; as well as sequential continuity to planning, rationale and decisions by agencies other than ARRS, which had definite impact on SAR force effectiveness. As the functional areas of training, R&D, safety, etc., are common to all missions, they have been addressed in this volume to preclude redundancy in Volumes II, III and IV.

Although Volume I is for the most part self-supporting, it does not in all areas provide the reader with the total information required to draw firm conclusions. In this respect it is partially dependent upon Volumes II, III and IV to provide the details of JSARC, LBR and ACR mission requirements and problem areas.

I. BACKGROUND 1954-1961

A. Force Reduction

To insure proper continuity, it is necessary to provide the reader with a brief summary of Air Rescue Service (ARS) activities and historical data for the period 1954-1961.

The Korean Conflict ended on 27 July 1953 and brought with it a significant reduction in the 7,900-man ARS force. This figure represented a three-year growth of 4,800 men, most of whom had been pressed into the Rescue force in order to meet the ever-increasing Search and Rescue (SAR) needs of the Korean War. Beginning in 1953, the Rescue Service was reduced from a force of 12 groups and 50 squadrons (7,900 personnel) to its level of 11 squadrons (1,600 personnel) in 1961. During this period, archaic aircraft from other commands were procured and mission concepts were updated to preclude degradation of mission capability, yet allow for the reduction of personnel.

In the spring of 1954, the War in French Indo-China created a crisis throughout Southeast Asia (SEA) and resulted in a "stop order" being issued concerning the ARS force reduction. However, the signing of the Southeast Asia Treaty of Defense during the fall of 1954 caused the "stop order" to be lifted and the reduction in force to begin again.¹

B. Rescue Reorganization

Two other changes occurred during 1954. Their purpose was to increase Rescue's flexibility. As originally organized in 1946, the Air Rescue Service was a self-supporting organization with its own mess, supply and other services. Under a new 1954 Table of Organization, these support units were reduced to a minimum and Rescue emerged as a purely operational agency. The second change established a system of manning that took into account that Rescue units in different parts of the world had problems peculiar to them alone. A unit stationed in the arctic, for example, might have a mission identical with that of a unit in the tropics; but weather conditions, terrain, communications facilities and base support could drastically alter the requirements of the two units. It could readily be seen that the concept of completely standardizing the units was, for the most part, impractical; therefore, reorganization along functional lines was immediately accomplished.²

The new concept of manning, as established during 1954, allowed the commander of a group to state the personnel requirements he needed in order to perform his assigned mission. The Table of Organization, which determined the overall strength of the Air Rescue Service, was used as a guide; but the group commander had the authority to shift his men within the groups or the squadrons just so long as the overall command strength

was not affected.³

C. The Buildup

During the 1954-1955 time frame, retrofit of airframes originally acquired in 1949, as well as the procurement of "castoffs" from the Military Air Transport Service (MATS) fleet, enabled the Rescue Service to keep its head above water. The SB-17 and SB-29 with the aid of their attached lifeboats had, to a degree, supplied the long-range search and rescue capability for ARS operations over water. While excellent aircraft in their day, all unmodified B-29's and B-17's were being phased out of the Air Force inventory. This phase out caused the Air Rescue Service considerable difficulty. Parts became scarce and personnel who were familiar with the aircraft became a rarity. Aside from this, a detailed evaluation of the two aircraft revealed that for the average SAR mission, they were overpowered and the high rate of fuel consumption caused a significant range limitation.⁴

Although the decision to replace the SB-29 and SB-17 was made early in 1953, it was not until October 1955 that the first of 38 SC-54's appeared in the Rescue inventory.⁵ Historically, delays of this type were the rule rather than the exception. To belabor the cause factors serves no useful purpose other than to point out that high level decisions were made which resulted in a lowering of the Rescue priority for new equipment and

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an increase in the amount of "hand-me-downs."

It was not until 1956, three years after the Korean Conflict ended, that the Rescue Service received the SH-21B, a heavy lift helicopter equipped for SAR missions. The year 1956 also saw the introduction of the SA-16B amphibian aircraft to the ARS inventory. The SA-16B was a retrofit of airframes originally acquired in 1949 and was destined to remain in service until mid-1968. The SC-47, a modified version of the original 1938 product, was again reworked in 1955 and appeared "on the line" in April 1956. It was to remain, in spite of its limitations, until 1958.⁶

D. Wartime Mission Clause

The 1958-1961 time frame was a relatively stable one for the Air Rescue Service, insofar as equipment update was concerned; however, mission prosecution techniques remained under constant study in an effort to find a better way to do the same job. It is of utmost importance to note that during this so-called "period of peace" the wartime mission clause was withdrawn from the ARS mission statement by Headquarters USAF. This was predicated on the mistaken philosophy that "wartime SAR is merely an extension of peacetime equipment and procedures." This action, perhaps more than any other, created a technological void in personnel recovery systems which did not receive a high enough Research and Development (R&D)

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priority to allow for interface with the modernization of the tactical forces.⁷ Lessons learned from World War II and Korea were quickly forgotten by planners who were working in an environment fraught with budget restraints and shortages of personnel and equipment. Throughout this period, the Rescue Service continued to perform its mission of saving lives and equipment. With the successful completion of each mission the demands on the ARS resource increased. It can be concluded that the Air Rescue Service's continued mission successes occurred in spite of antiquated equipment, austere manning, budget limitations and the failure of planners to assign priorities sufficiently high enough to allow for tactical modernization.

The post "Sputnik" period brought an associated update in ARS mission philosophy -- up to this point the Rescue Service concerned itself almost exclusively with the saving of lives with a residual benefit of equipment salvage. In August 1958, Headquarters USAF recognized that future weapons systems dictated a continuing and expanding need for recovery of personnel and important paraphernalia, now identified as materiel, hardware or just plain "things." In September 1958, a conference was held at Orlando AFB, Florida to determine the need for and the requirements of a USAF aerial recovery force capable of locating, rendering aid to, and retrieving personnel and such equipment as nose cones and capsules. The conference set a new precedent in that it marked the first time such a group had ever

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met to discuss the complex problem of the recovery of "space hardware." Thus, the recovery of equipment became an important adjunct of the Rescue mission -- not just a residual benefit. The hardware recovery portion of the Rescue mission was included in a 1960 update of AFR 20-54.⁸

A bright spot occurred in October 1961 when the ARS assumed the Local Base Rescue (LBR) responsibility for the USAF. In so doing, this provided the Rescue Service with a helicopter capability for the first time since 1959. The development of the LBR mission concepts inaugurated the first attempts at fulfilling a mission void which had existed for many years in the Air Force/Air Rescue Service concept of short-range rescue techniques. Prior to the advent of the HH-43, ground parties and fire trucks manned by a "crash rescue crew" covered aircraft accidents which occurred in the local area serviced by each base. This sometimes involved the transversing of almost impassable terrain which caused excessive delay in rescue forces arriving "on scene." Utilizing the HH-43's rapid reaction capability, a minimum rescue force could now be on the way to a crash site sometimes in advance of the actual impact.

The year 1961 also saw an increase in ARS support for the National Aeronautics Space Administration (NASA) sponsored "Man in Space" program. The early Mercury flights required both launch and recovery site support, a mission for which the Rescue Service was hardly prepared to

perform in view of past failures to update equipment. NASA support requirements are only germane to this report insofar as they show a gap in technology as regards the modern day environment in which ARS was required to operate. It should be noted here that NASA support requirements provided the impetus for a "crash program" to update existing equipment, as well as the basis for "new buy."

In summary, the casual reader can readily see that in 1961 for ARS to embark on a wartime mission within the existing "state-of-the-art" did not make too much sense. It will be shown in later portions of this report that the need for a SAR force in Southeast Asia was recognized in 1961, yet very little, if any, planning for its wartime role was begun, based on the fact that ARS "officially" did not have an assigned wartime mission. This was the case, despite the fact that a myriad of war and contingency plans contained SAR tasks.

SECTION I

FOOTNOTES

1. John L. Vandegrift, Jr. , A History of the Air Rescue Service
(Rollins Press, 1959), p. 94.
2. Ibid., p. 95.
3. Ibid.
4. Ibid., p. 96.
5. Ibid., pp. 96-97.
6. Ibid., pp. 98-99.
7. ARRS Global Operations, Plans and Programs Briefing; presented by
Col H. H. Bridges at the Atlantic ARRC Commanders Conference;
28 Feb 1968; page 9; ARXDC document 68-180 classified SECRET.
8. Vandegrift., op. cit., pp. 170-171.

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II. RECOGNITION ERA

A. The Initial Period

Documentation in support of SAR activities in SEA during the 1961 time frame was significantly lacking. As the level of American commitment in Vietnam increased, there was evidence a proportional share of increase in the level of air activity took place. The period 14-16 November 1961 heralded the arrival of the JUNGLE JIM/FARMGATE detachment in Vietnam, and with it, the first possible involvement of U.S. aircrews in direct combat. However, the semi-covert nature of this operation prevented any SAR force introduction. As FARMGATE crews entered into combat under the guise of conducting training missions, the risk of being shot down increased. SAR was left to whatever ground forces were in the area at the time of loss; obviously, a less than satisfactory system, and in direct violation of the SAR operational essentials set forth in AFM 2-36.¹

It is sufficient to say that Local Base Rescue did not exist in SEA during this time period. However, the requirement for such a force had been clearly identified soon after the U.S. became actively involved in the Vietnam conflict. Research of considerable documentation covering this time frame left no doubt that the early planning actions for involvement of professional SAR forces in SEA were fragmented and inadequate.

Many factors contributed to the lack of proper planning for

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deployment of ARS personnel and equipment. To mention a few, certainly the lack of a wartime mission clause for the Air Rescue Service confused and hindered the planners, as did the generally accepted concept that "wartime SAR is merely an extension of the peacetime mission." Austere budgeting, political considerations, SEA manpower ceilings and indecision at many echelons of command certainly played a part in the failure of planners to insure that an adequately equipped SAR force would be available.

To provide a better understanding of the problems that existed at that time, resolution actions should be addressed chronologically.

B. Preliminary Actions

In November 1961, as the increase in SAR activity occurred, the 2d ADVON Commander recognized that a staff agency within the Air Operations Center (AOC) would have to be established to add a semblance of command and control to the SAR effort.

It should be noted that prior to this decision being made almost all SAR activity was conducted on-scene by whatever force or agency happened to be on the spot. A salient point here is that this type of SAR procedure allowed no formal documentation or recording of the incident.

During the same time period, there was evidence to indicate that

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perhaps as early as late 1961 or mid-1962 a requirement was established to provide SAR support for covert air operations.²

ARS was tasked to provide the support for this covert air operation from existing resources. The security classification of the operation was significantly high enough to preclude lower level documentation; therefore, chronological reconstruction of the mission could not be accomplished.

It is significant to note here that traditionally the above "modus operandi" was typical of the lateral support rendered by ARS to other agencies. Its disadvantages:

1. A small cadre, usually two to four aircrews and airframes were dispatched as a self-supporting unit with command and control being exercised by the ranking crew member.
2. Techniques of self-support were not readily adaptable to the needs of a rapid reaction force deployed for a long period of TDY.
3. Command and control by the Air Rescue Service and the Military Air Transport Service was extremely difficult, if not nonexistent.
4. Inter-command, i.e., Pacific Air Forces (PACAF) to MATS to ARS coordination was not accomplished to the extent necessary to insure command support equal to the priorities assigned the operation.
5. Mission reporting and documentation were customarily maintained by the on-scene commander who returned the data to his parent

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unit where it was lost in the unit archives and consequently, extremely difficult to historically reconstruct the mission.

C. Pacific SAR Responsibility

At some point subsequent to November 1961, the Commander in Chief, Pacific Air Forces (CINCPACAF) established an Air Operations Center which included professional SAR trained controllers. This apparently was accomplished by issuance of a PACAF operations order levying a requirement on the Pacific Air Rescue Center (PARC) Commander to furnish the SAR controllers to the 2d ADVON.³

Traditionally, the SAR responsibility for the Pacific area was delegated by the Department of Defense (DOD) and the National SAR Plan to CINCPAC. CINCPAC further delegated his SAR responsibility to the Service or Major Area Commanders, i. e., Commander, Hawaiian Sea Frontier (COMHAWSEAFRON); Commander, Naval Forces Marianas (COMNAVMARIANAS); CINCPACAF; and Commander, Naval Forces Philippines (COMNAVPHIL). The Service or Major Area Commanders further delegated their SAR responsibility to the sub-area or numbered Air Force level, i. e., Commander, 13th Air Force, or Commander, 2d ADVON.⁴ Certain SAR agreements were promulgated within the authority of CINCPAC Instruction 3130.1 series. It was through this means that the Commander, 13th AF, in mid-1961, was assigned the SAR responsibility for the Saigon, Bangkok and Rangoon Flight

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Information Regions (FIR). This area was subsequently designated the responsibility of 2d Air Division (2d AD) by 13th Air Force Regulation. It should be noted that 2d ADVON was redesignated as the 2d AD. As the exact date of redesignation could not be documented, all reference hereinafter will be to the 2d Air Division.

The development of SAR forces in South Vietnam was tied directly to the degree to which U.S. military strength was overtly involved in the conflict. Consequently, the SAR forces suffered the same growth spasms as the combat forces and faced basically the same problems.

To provide rescue forces for the AOC, the PARC Commander selected three officers and three airmen from "in-house" resources. This cadre of personnel was alerted to the TDY requirements in December 1961 and reported to the 2d AD Commander in January 1962. Their mission was to establish a Search and Rescue Center (SARC) in the AOC and a SAR network for South Vietnam (SVN). The mission authority was contained in the PACAF operations order which directed the establishment of the AOC as well as the other actions relating to the contingency. The SAR center opened under the auspices of the 13th AF SARC which provided the ARS command control function. In the beginning, the AOC was located in a Jamesway hut adjacent to the runway at Tan Son Nhut AB. It was ill-equipped, i.e., no office furniture available, yet the application of "Yankee ingenuity" quickly

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solved the problems; and the 2d AD SARC became a reality. After approximately 30 days of operation, the entire AOC moved into permanent quarters. The initial concept of operations did not involve the use of any ARS aircraft in Vietnam since the magnitude of the U. S. effort was limited. In order to establish a SAR network, Army advisors to each of the Corps areas in Vietnam were contacted, and agreements were negotiated whereby U. S. Army helicopter companies, on a non-mission interference basis, could be called upon to assist the 2d AD SAR effort. Army cooperation was excellent. The existing communications system was far from adequate; however, jury-rigging allowed for communications continuity between the Army, Air Force and Navy. The network consisted of a system of field telephones tied to sub Air Support Operations Centers (ASOC) which were connected by land lines to the AOC at 2d AD. Basic Search and Rescue Standard Operating Procedures (SAR SOP's) were written in order to standardize mission concepts.⁵

The best summary of the early SARC efforts can be found in SEA tour resumes submitted by assigned personnel.⁶

Timely SAR efforts were hampered by poor communications, lack of a system of filing flight plans and passenger lists, and lack of an adequate flight following capability. More often than not, search would be initiated when an aircraft did not return in the evening. Although I do not paint a very bright picture, we did the best we could with the limited facilities at hand and did have an established SAR network approximately ten days after arrival.

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The general area of responsibility for search and rescue control encompassed Cambodia, Laos, Thailand and Vietnam. Political reasons precluded basing rescue aircraft within Cambodia and Laos and conducting search and rescue operations in these countries; therefore, all rescue aircraft would have to be based in Thailand and Vietnam. The requirement existed for rescue services in Thailand, however, the Thailand Air Force possessed sufficient aircraft to prosecute routine SAR missions. In view of this fact, the ARS role in Thailand was normally relegated to one of monitor and assist. The primary area of responsibility was within the Republic of Vietnam (RVN) due to the extensive operation of U. S. forces. The "Joint Vietnamese/U. S. Search and Rescue Agreement" set forth the responsibility of the SARC, within the Air Operations Center of 2d AD, to provide search and rescue coverage for all U. S. forces within the Republic of Vietnam.⁷

D. Det 3 -- Pacific Air Rescue Center

Permanency was added to the initial ARS cadre in April 1962 when it was designated Detachment 3, Pacific Air Rescue Center by MATS S.O. G-27.⁸ Manning for Det 3 was three officers, one of whom was designated commander, and two NCO's. The first commander arrived 2 July 1962. The formal activation of Det 3 brought with it official assignment of SAR responsibility to 2d AD as established by 13th Air Force Regulation. This area of responsibility posed problems as cited by the Det 3 Commander.⁹

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This area was mammoth in size and could not be adequately controlled by our small detachment. In August 1961, a 2d AD regulation designated the USAF Commander, Don Muang AB, Thailand, as the 2d AD SAR representative for Thailand and Burma. I visited this commander and wrote all of his SAR procedures and agreed to augment him with controllers when required.

From a pitifully sparse beginning then, the SAR effort in SEA was finally underway. "Full speed ahead" became the order of the day as shown by the following excerpt from the Det 3 Commander's Southeast Asia tour resume: "Problems were multifarious in numbers. A mission was in progress when I reported for duty and with only a clerk-typist present, Det 3 became operational immediately."¹⁰

When the detachment was initially manned by permanent assignees, no thought had been given to their background, only their AFSC. This resulted in the assignment of personnel without previous experience in Rescue Control Center (RCC) procedures. This experience void caused the inauguration of an extensive On-the-Job Training (OJT) program which was under constant interruption by actual mission activity. To resolve this problem, the Det 3 Commander took the following action: "Hq ARS was notified of this deficiency and requested to provide future replacement personnel knowledgeable in RCC procedures."¹¹

It soon became evident that the detachment's unique SAR responsibilities

would ultimately exceed the capabilities of the small number of assigned personnel. As a consequence, the Commander, Military Assistance Command, Vietnam (COMMACV) was requested to assign Army personnel in the Rescue Control Center to serve as liaison between USAF and USA. This request was honored; thus ARS, for the first time, had a partial Joint Search and Rescue Center (JSARC) in SEA. A request was also submitted to the U. S. Navy for liaison personnel to staff the SARC; however, it was denied due to austere manning. The urgency of this problem was emphasized by the following excerpt:¹²

During the first SAR mission it was recognized that trained Rescue aircrews and aircraft were urgently needed in South Vietnam (SVN). I prepared a requirements study and with 2d AD concurrence it was forwarded to PARC. Six months later, follow-up action revealed no favorable action had been taken. An immediate requirement to place HH-43B detachments at Da Nang, Pleiku, Bien Hoa and Soc Trang was identified in a second study which was also forwarded to PARC. Again, no apparent action was taken.

E. SAR Mission Problems

During the period from 1962 until late 1963 there were no dedicated SAR forces in SEA, i. e., forces strictly assigned to the search and rescue mission. The Rescue controllers who had the responsibility for search and rescue had nothing to work with except a few USAF fixed-wing aircraft and, on occasion, a few U. S. Army H-21's and H-34's from the U. S. Marines.

The Vietnamese Air Force (VNAF) had nothing, even though all of the missions at that time involved the VNAF. During the search and rescue missions, a few helicopters that were not being used on tactical missions were made available to the RCC, and those few that were made available were not equipped to perform the rescue mission. Only a few had hoists (cable length -- 50 ft.) and these were not installed on the aircraft as common mission equipment. After continued requests to the Commander, Military Assistance Command, Vietnam, a 250 foot rope was finally put aboard each U.S. helicopter. This was the first meager attempt made toward perfecting a system to allow penetration of the jungle canopy. A supply requisition submitted PACAF-wide produced eight litters for helicopter use. These litters arrived in an unusable condition which necessitated the use of local purchase funds to buy parts. This was only one of numerous equipment and operational problems cited by the Det 3 Commander.¹³

. . . my controllers modified these litters which were subsequently prepositioned at strategic U.S. Marine and Army locations.

Communications were horrible in 1962 and 1963. It was nearly impossible to contact other units; many times, a bicycle ride was more expeditious. Communications requirements for the SARC at Tan Son Nhut and the RCC at Da Nang were submitted to include VHF, UHF and HF equipment which was required to provide communications with on-scene commanders. Many SAR missions involved an extensive search effort and required one of my controllers to deploy to forward locations and operate from village huts. In many cases, I deployed with the

forces to plan and assist in controlling both ground and air searches. Frequently, we were a part of an attacking force which was being used to secure an area in which our helicopters were to operate. On some SAR missions we were forced to pay Vietnamese people to provide sampans for use in searches. We made necessary arrangements to have reward leaflets printed and dropped from Forward Air Control (FAC) aircraft. These leaflets were invaluable on several searches. We were restricted by base and major command regulations not to exceed \$500 reward money. The Viet Cong (VC) were offering much more for captured prisoners, so this procedure became very competitive. However, on several occasions it did work. One problem we encountered was that nearly every village had its own language. As a result, many of our leaflets could not be read by the natives.

After a crash was located, a landing force was lifted to the nearest clearing. In many instances, this was a quarter of a mile from the crash site. Sometimes, due to the dense jungle, it would require 24 to 36 hours to cut our way through. On occasion we had to fight the VC to gain entrance. This necessitated food, water and ammunition resupply by helicopter. The VC were not interested in captives at that time, only in obtaining the aircraft wreckage from which they used cables, metal, glass, etc. for the manufacture of crossbows, shotgun ammunition, etc. Many times, the wreckage was booby-trapped. A FAC aircraft was used to drop smoke to indicate the direction to the crash and to provide a communications relay to the Search and Rescue Center. I had obtained two sets of VHF communications equipment for use during this type of mission. After the crash site was reached, it was another ordeal to carry survivors or bodies back to the clearance for helicopter pick-up. On two missions, the night order of battle was to sit in a circle (back-to-back) with half of the force sleeping and the other half on guard. In one instance, close enemy fire caused us to disperse and two of the Vietnamese (suspected VC) never returned.

On one mission, a crash was located near the top of an 8,000 ft. mountain. To gain entrance, three U. S.

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Army troops and I slid down 300 ft. ropes. A U. S. Marine H-34 helicopter attempted to hover in order to pick up two survivors and, while lowering rope down through the trees, lost rotor RPM, crashed and burned. We then had three other survivors to care for, one of whom was seriously burned. Gasoline-powered saws were dropped to cut trees to facilitate the landing of another helicopter. Five helicopters were lost on this mission. Two deaths occurred which were a direct result of having inadequate SAR configured equipment to perform the ACR mission.

During one rescue effort, some friendlies advised the VC had captured two survivors. This information was passed to 2d AD. A helicopter was dispatched to provide the SAR force airlift to the villages immediately adjacent to the crash site. After meeting with the village chiefs and several IV Corps Vietnamese generals, it was decided a task force, composed of ground troops, would be required to invade the VC compound. It took two days to round up and organize this task force. The invasion was launched. However, the VC had been notified of our plan and had escaped with the prisoners the night before.

It can be seen from the foregoing statement that even though there was a search and rescue force of controllers in SEA, a need still existed for trained search and rescue aircrews and equipment.

The earliest indication of a search and rescue capability, from the standpoint of trained aircrews and equipment, came in the summer of 1962 when two HU-16B's and two H-19 helicopters were withdrawn from the PARC resources and assigned temporarily to the operational control of the 3d Aerial Reconnaissance Task Force, 6010 Tactical Group, Takhli AB, Thailand.¹⁴

The Contemporary Historical Evaluation of Combat Operations Report

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(entitled "The USAF Operations from Thailand, 1964-1965" - page 2)
indicates this group was headquartered at Don Muang Airport, Bangkok, Thailand. Forces deployed in support of the 6010 Tactical Group were well trained in search and rescue techniques, however, their mission was a highly sensitive "covert" one; therefore, their services were not made available to the Commander, 2d AD. Further information regarding this force is found in Section II, paragraph B of this report.

F. Bilateral Agreement

As SAR mission activity increased, the problems of coordination and force utilization became more complex. It soon became evident that some type of bilateral agreement would have to be negotiated between the VNAF and USAF. The task of developing a Joint Vietnamese/U. S. SAR Agreement was assigned to the Deputy Chief of Staff/Operations, 2d AD, who further delegated the "leg work" function to the ARS representative assigned to the AOC. The agreement was to have as its basic purpose that of establishing policies for mutual coordination and control of the search and rescue effort within the Republic of Vietnam. Salient points of the initial effort:¹⁵

1. Provided the following definitions:

- a. Inland Regions: The inland areas of the Republic of Vietnam.

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b. Maritime Regions: The waters subject to the jurisdiction of the RVN and the high seas within the Saigon FIR.

c. Saigon Search and Rescue Center: The agency operated by the VNAF Air Tactical Control Center (ATCC) and located within the AOC, for the collection and dissemination of SAR information, for the coordination of any search and rescue efforts involved in SAR incidents other than U. S. military, and for the coordination of all search and rescue efforts of Vietnam agencies participating in U. S. military SAR incidents.

d. AOC, SAR Coordination Center: The agency designated by the Commander, 2d AD, for collection and dissemination of all information pertaining to U. S. military incidents, for the coordination of all search and rescue efforts involved in such incidents, and for the coordination of all search and rescue efforts of U. S. forces participating in other SAR incidents.

2. Caused all signatories to agree:

a. That the responsibility for search and rescue should remain with the agencies specified in the previously mentioned definitions.

b. To actively support and enforce the Joint Vietnamese/ U. S. SAR Agreement.

c. That provisions of the RVN Department of National Defense General Staff Air Force Regulation 64-1; Vietnamese Navy Publication KBC 4.222; Post Office Publication KTTK/TK/125; Civilian Director,

Air Traffic Section Publication 1.674; U.S. National SAR Plan (AFM 64-2); Army FM 20-150; NWP 37(A); ICAO Document 7333-AN/859 and the Joint Vietnamese/U.S. Search and Rescue Plan were to be considered part of the agreement.

d. That any agency assuming coordination responsibility for a SAR mission should retain that responsibility until appropriately relieved or until the mission terminated. Commanders, when committing facilities for SAR coordination purposes, were to retain certain command prerogatives, in that discretionary withdrawal of forces could be made at any time.

e. That the successful accomplishment of a SAR mission was more important than the related technicalities of geographical location and agency jurisdiction.

f. That the agreement should not be construed as an obstruction to prompt action by any agency or individual to relieve stress whenever and wherever found; that in SAR operations there should be a free and unrestrained flow of information, action, and cooperation between representatives of the signatory agencies.

g. That release of information to news media should be in accordance with the individual agency's directives and through the responsible RCC and/or the specific control agency.

3. Provided for the first time, the authority, whereby the government

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of the Republic of Vietnam was to assume an obligation to provide measures of assistance to aircraft in distress in Vietnamese territory, regardless of nationality. This authority was gleaned from the fact that the government of the Republic of Vietnam was a signatory state to the convention of the International Civil Aviation Organization (ICAO).

4. The agreement's most significant point was that all SAR incidents, other than U. S. military, which occurred within the Saigon FIR, would be controlled by the Saigon Rescue Coordination Center of the VNAF Air Traffic Control Center (ATCC). The 2d AD SARC was designated as the primary control agency for all SAR incidents involving the U. S. military.

It can readily be seen then, that the agreement made the Vietnamese responsible for civil SAR and their own forces. However, it left the SAR effort in support of U. S. forces more or less up to the designs of COMMACV and Commander, 2d AD. The significant importance of this agreement was that it "officially" signified the opening of the "recognition era" in the chronological development of the SEA SAR effort.

The general consensus among SAR officers during the late months of 1962 was that the recognition of the problem involving the lack of a trained SAR force only served to add increased administrative responsibilities to their already undermanned staff. They were besieged with requests for studies and allied documentation to support their pleas for increased

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manning of both aircrews and equipment, which they felt were necessary to support the responsibilities levied by the joint SAR agreements. It should be noted that the U. S. forces were not by themselves when it came to equipment and manpower shortages. The Vietnamese were also ill-equipped to perform their SAR responsibilities under the terms of the SAR Agreement.¹⁶

G. U. S. Army SAR Effort

Because of the lack of an assigned dedicated SAR force during the 1962-1963 time period, a brief description of SAR efforts by the Army would seem germane to this report. It should be kept in mind that, where possible, control of SAR missions was handled by the Commander, 2d AD, yet in many cases control was dictated by the circumstances surrounding the incident, i. e., what Service force happened to be on-scene, geographical location of the incident, as well as the on-scene "urgency" evaluation.

As a general definition, Army Air Rescue operations fall under the heading of rescue, more specifically as "the discovery and removal by means of air transportation of any person from a situation in which death, capture, destruction or physical harm is probable." Although the actual missions of aeromedical evacuation and crash/rescue operations are somewhat different, the overall purpose is the same.¹⁷

There apparently was no standard Army doctrine which concerned

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itself with SAR missions per se. The operational concept can be said
". . . to be a matter of expediency and judgment and, on the part of
those concerned with respect to the employment of whatever helicopters are
available in any given situation"18

Rescue, in the sense of aircraft downed in South Vietnam due to
mechanical failure or enemy action, did not lend itself to a discussion of
neatly defined, universally accepted operational concepts. There was little
documentation in support of specific Army activity directed toward a search
for lost aircraft belonging to either their own forces or the USAF. However,
several observations can be made from the research of source material
available. Any downed aircraft not located within the defense perimeters of
a friendly ground force must be considered to be in hostile territory.
Therefore, rescue operations involved not only recovery of personnel, but
recovery or destruction of the aircraft regardless of the degree of damage,
so that it did not fall into enemy hands. The autorotative characteristics of
the helicopter usually allowed for minimum damage to the airframe, as well
as personnel; sometimes, repairs could be effected and the helicopter flown
out. If the wreckage was deemed salvageable, it was rigged as a sling load
and lifted out by a larger helicopter, i.e., CH-47/54. In other cases, the
wreckage was not worth the effort necessary to recover it, or recovery was
impossible due to the enemy situation. In almost every situation it was

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incumbent on the local on-scene commander to make these decisions. It was probably for these reasons that no published doctrine existed which described an Army SAR posture.¹⁹

Regardless of the fact that there appeared to be a doctrinal difference between the Air Force and the Army concerning SAR techniques, the fact remained that conceptually no difference existed. During the "pre-recognition era" the entire SAR effort on the part of the Air Force was, of necessity, a joint effort of all assigned forces. An "any way to get the job done" attitude prevailed.

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SECTION II

FOOTNOTES

1. Air University Designated Study No. 7, Vol. VII, Rescue, 15 Jun 1968, Section I, ~~p. 1.~~
2. Project CHECO, Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-66) Continuing Report, 24 October 1966, ~~pp. 1-2.~~
3. Ltr, Hq EARRC (ERCCO) to Hq ARRS (ARXDC), Subj: Corona Harvest Study, 18 November 1968, ~~p. 2.~~
4. Ltr, Capt Gordon L. Hall to Hq ARRS (ARXDC), Subj: Corona Harvest Study, 21 Nov 1968, ~~p. 2.~~
5. Ltr, Lt Col Albert R. McNamee to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, 6 Nov 1968, ~~p. 1.~~
6. AFM 64-2, ~~p. 2-2.~~ *date of publication*
7. McNamee, op. cit., pp. 1-2.
8. Ibid., p. 2.
9. Second Air Division SAR Requirements Study, Republic of Vietnam, 1 Sept 1963, ~~pp. 2-3.~~
10. MATS S.O. G-27, 23 Mar 62 - established Det 3, Pacific Air Rescue Center (hereinafter referred to as Det 3, PARC).
11. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, ~~p. 1.~~
12. Ibid.
13. Ibid.
14. Ibid.
15. Ibid., pp. 2-3.

(Section 11 Footnotes - continued)

14. Ltr, Capt Gordon L. Hall, 21 Nov 1968, op. cit., p. 2.
15. Joint Vietnamese/U.S. Search and Rescue Agreement, undated, pp. ~~1~~,
~~2~~, A-1.
16. Project CHECO Southeast Asia Report, USAF Search and Rescue in
Southeast Asia (1961-66) Continuing Report, 24 Oct 1966, ~~p. 14~~.
17. Study No. 7, op. cit., p. 52.
18. Ibid., p. 57.
19. Ibid.

III. PLANNING ERA 1962-1963

A. Requirements (Phase I)

As early as November 1962, Hq ARS identified an urgent requirement for helicopter units. This was expressed in a letter to HQ USAF outlining the need for additional helicopter units to support contingency and extended range recovery operations. The letter did not address the Southeast Asia requirement.

The Deputy Chief of Staff/Plans and Operations, HQ USAF, replied to this letter in February 1963 stating:¹

We recognize the necessity of possessing an Air Force helicopter capability to support contingency and extended range recovery operations. We believe that the helicopter resources currently allocated to the ARS Local Base Rescue (LBR) program possess the potential capability to support contingency operations. The reorganization of the LBR program, currently under consideration at your headquarters will assist in the realization of this capability. In this regard, you could incorporate a provision to over-augment one LBR detachment in each overseas theater and in each CONUS Air Rescue Center area so as to provide a contingency helicopter LBR force for deployment when needed. Additionally, Tactical Air Force units deploying during contingency operations and the LBR units associated with such forces can be deployed simultaneously.

In July 1963, HQ USAF expressed the desire that ARS consider development and maintenance of a rapid reaction mobility capability within the LBR program. Hq ARS reacted with the development of the ARS OPLAN 510, and submitted it for approval with a letter to Hq MATS stating:²

ARS Operation Plan 510, Local Base Rescue Helicopter Contingency Force will provide USAF with a rapid reaction helicopter force to meet a variety of contingencies, on a world-wide basis. Preparatory actions have been taken to assemble and locate six (6) Mission Support Kits to be used in support of this plan. . . . To ensure authoritative direction to Friendly Forces, USAF approval is required. . . . Upon our receipt of this approval this plan will be implemented.

Approval was contained in a letter from HQ USAF dated 1 May 1964 which stated:³

This Headquarters has reviewed Air Rescue Service Operation Plan 510, Local Base Rescue Helicopter Contingency Force Mobility and Organization (LBRCF). Its provisions are adequate with the following exceptions:

.
ARS Plan 510 is approved when the recommendations contained in paragraphs 1a and 1b have been incorporated in a change to the Plan.

The ARS OPLAN 510 was in essence then, the plan that ARS field commanders would utilize to deploy LBR forces to support any and all contingencies. In most respects it was adequate to deploy forces for the purpose of supporting "short-term" contingencies, but could not in any way be considered adequate to support "tactical" or "long-term" contingencies. This was due to the fact the plan did not make provisions for such essential support as housing, messing, maintenance facilities, etc., normally provided under Host-Tenant Support Agreement (AFR 11-4). The plan was subsequently utilized to deploy the initial LBR forces to SEA. The problems

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encountered as a result of this deployment will be discussed in Section IV of this document.

The first significant action of the "recognition era" was taken by the second ARS Commander of Detachment 3 in September 1963. A comprehensive study of the search and rescue requirements in Vietnam from the point of view of the combined efforts of all military forces was prepared. The study was subsequently endorsed by Commander, 2d AD and forwarded as "Second Air Division SAR Requirements Study." The study had as its purpose:⁴

1. To analyze the combined U. S. /Vietnamese counterinsurgency effort in South Vietnam with regard to rescue requirements.

2. To recommend that a professional SAR force be activated to prosecute the SEA SAR mission.

The study further stated that the mission of the U. S. and RVN forces dictated extensive air/ground operations over inaccessible terrain. Due to the absence of an adequate road and waterway system, the requirement to effect personnel recovery utilizing aircraft was highly desirable.

The following information covering the risk environment in which the total SEA air effort operated was provided as a means of substantiating the study's ultimate conclusions:⁵

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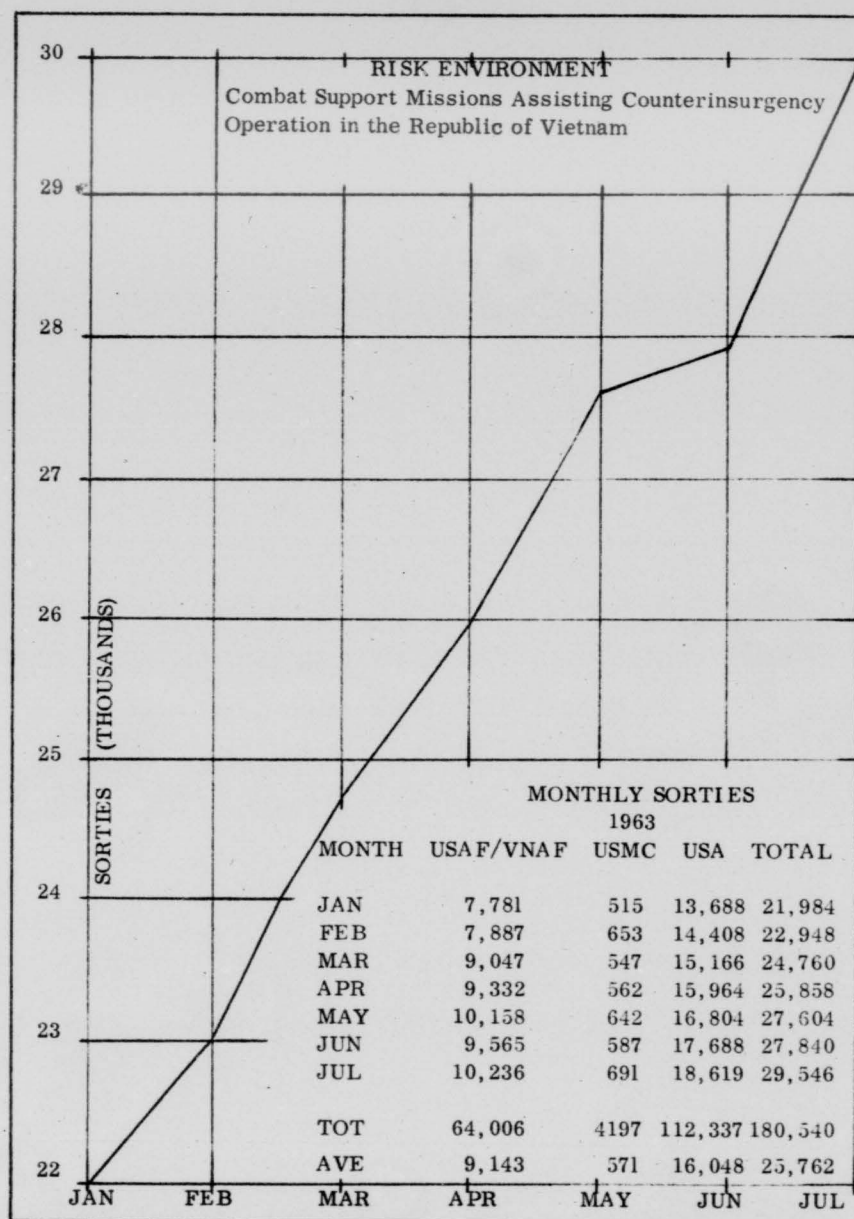
1. The intensive flying effort within Vietnam was conducted in an area which by virtue of mountainous terrain and unfavorable weather conditions tended to make combat operations extremely difficult. (Ref Tab A for average monthly sortie rate.)

2. Logistic and maintenance problems were compounded by virtue of the fact that many different types of aircraft were in use, i. e., jet, light observation, transport, fighter, reconnaissance, and helicopters.

3. As air operations intensified, the loss rate would tend to increase (Ref Tab B). Further, steadily increasing requirements for close air/ground support would result in higher exposure to enemy ground fire. Although the majority of the sorties were flown during daylight hours, there would be an increasing requirement for night sorties due to the extensive activity of the Viet Cong under the cover of darkness. Because of the constant high temperatures, coupled with thunderstorms, and the associated adverse flying conditions, weather was also an important consideration (Ref Tab C).

4. The relatively heavy flow of military and civilian personnel through and within the RVN brought about an increased requirement for "in-country" movement of personnel, resulting in an increased exposure to enemy action. For example, transportation of personnel to and from their duty station in Vietnam, rotation of approximately 14,000 military personnel annually, and modern mobility concepts which required frequent movement of combat troops within the RVN (Ref Tab D).

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Tab A

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(S) LOSS RATE: The number of aircraft known to have been forced down in the Republic of Vietnam due to battle damage and mechanical malfunction for the period 1 January through 31 August 1963 is indicated below. Many of the aircraft were shot down by ground fire. Aircraft that made controlled forced landings, and those that crash landed are shown in separate columns. Personnel killed in action (KIA) and wounded in action (WIA) are also shown. The KIA and WIA totals are considered to be extremely conservative for the period covered. This is caused by the difficulty in obtaining exact data from each of the joint services, due to incomplete records being available. The total number of downed aircraft are also considered conservative for the same reason.

<u>COMMAND</u>	<u>DOWNED</u>	<u>CRASHED</u>	<u>FORCED LANDED</u>	<u>KIA</u>	<u>WIA</u>
USAF	9	9	0	7	0
USA	58	32	26	20	36
USMC	6	2	4	1	4
VNAF	8	7	1	2	14
OTHER	<u>2</u>	<u>2</u>	<u>0</u>	<u>N/A</u>	<u>N/A</u>
TOTAL	83	52	31	30	54

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CLIMATOLOGY STUDY-REPUBLIC OF VIETNAM:

The following data was extracted from the records of the Republic of Vietnam Directorate of Meteorology. Information was gathered at seventeen (17) main weather stations in their area of control.

The following data is yearly averages given in the number of days that the weather phenomenon indicated can be expected at all sites:

<u>TYPE</u>	<u>DAYS</u>
FOG	13
THUNDERSTORM	62
RAIN	142

The daily average high temperature for the year is eighty-five (85) degrees Fahrenheit.

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MATS AND MATS CIVILIAN CONTRACT FLIGHTS
IN/OUT TAN SON NHUT AB, SAIGON

MONTH	MATS MILITARY	CIVILIAN CONTRACT	TOTAL MATS MIL & CIV	PASSENGERS
JAN	164	82	246	4,443
FEB	137	83	220	4,454
MAR	138	82	220	5,631
APR	123	89	212	5,439
MAY	109	113	222	5,929
JUN	106	81	187	5,517
JUL	137	82	219	5,866
AUG	93	78	171	5,004
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	1,007	690	1,697	42,283
MONTHLY AVERAGE	126	86	212	5,285

AVERAGE PASSENGERS PER PASSENGER AIRCRAFT: 155.

AVERAGE NUMBER Passengers airlifted within the Republic of Vietnam
via C-123 aircraft:

MONTHLY - 8,000; ANNUAL - 96,000.

Combined C-123, MATS, and MATS Contract:

TYPE	MONTHLY	ANNUAL
C-123	8,000	96,000
MATS & CONTRACT	5,325	63,900
TOTAL	13,325	159,900

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It was pointedly emphasized that there were no ARS aircraft assigned to Vietnam. In addition, none of the assigned aircraft in the Joint Services were designated solely for rescue operations. This had the following adverse effect during all rescue operations:⁶

1. Rescue aircraft were not immediately available for SAR missions.
2. Available aircraft were not equipped for SAR missions, i. e., hoists, medical gear, slings, etc.
3. Available aircraft were subject to recall at any time to complete their combat mission.

Personnel assigned to operational units did not possess rescue training other than basic procedures that were taught to all aircrews. Their knowledge of "SAR basics" (pick-up procedures, aerial delivery, search patterns, coordination requirements and search control) was extremely limited. Moreover, no personnel were assigned who were trained to parachute into mountainous and jungle terrain to assist survivors and provide medical aid. Areas controlled by the Viet Cong, for the most part, were inaccessible. Therefore, the requirement for rapid response and recovery was paramount. It was concluded that assigned pilot and medical personnel could be trained in rescue procedures; however, the highly specialized training requirements of pararescue personnel prohibited "in-the-field"

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training.⁷

A strong argument was presented relative to the real need for a professional SAR force. A requirement did exist for specialized rescue items; however, the equipment authorization lists for the operational units (Army/Navy) did not authorize such equipment. This type of equipment was urgently needed to efficiently prosecute the Search and Recovery mission (Ref Tab E).⁸

The conclusions reached in the study were:⁹

1. An urgent need existed for a professional SAR force utilizing equipment specifically designed for one mission -- RESCUE.
2. The establishment of a professional rescue force at strategically located airfields in the RVN would provide a capability for rapid response to any SAR need and would have the following impact:
 - a. Provide a capability to prevent unwarranted loss of human life.
 - b. Increase morale among air and ground personnel, due to the knowledge that adequate equipment, manned by professional crews was available for rescue operations in all areas of the RVN.
 - c. Preclude the frequent diverting of aircraft from tactical missions to SAR missions and, as a bonus dividend, provide an additional capability to recover munitions and equipment from a crash site before VC

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RESCUE KIT:

QTY	ITEM
1*	Pyrotechnic gun with six flares.
6*	Day/night distress flares.
2*	Blankets
1*	URC-11 radio
1*	Battle dressing kit, including airway pharyngeal and morphine.
2*	Machete.
2*	Quarts plasma or glucose.
1*	Crash entry kit:
	2 Shovel, D handle.
	1 Crash axe.
	1 Pry bar, long.
	1 Pry bar, short.
	2 pr Gloves, heavy work.
1	Inter aircraft signal light (Aldis Lamp).
1	Canvas folding or stokes litter.
1	Sling hoist, (horse collar).
1	Hoist operators safety harness.
1	Rope, 200'.
6	Message drop container.
2	Gallons water in 1 pint cans.

(*) Items stored in back packs to be lowered or carried as a kit.

OPTIONAL EQUIPMENT IN STANDBY KIT:

1	Rescue basket.
3	Portable battery powered light.
1	Gasoline powered chain saw, 24"
1	Body bag.
1	PRC-10 radio.

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forces could salvage these materials.

Study Recommendations:¹⁰

1. Rescue forces should be assigned to the following locations in the RVN: Bien Hoa, Can Tho, Da Nang and Pleiku. The location of these bases would allow for a reasonable reaction time to any site within the area of responsibility (Ref Tab F). Selection of these locations was based on the following considerations:

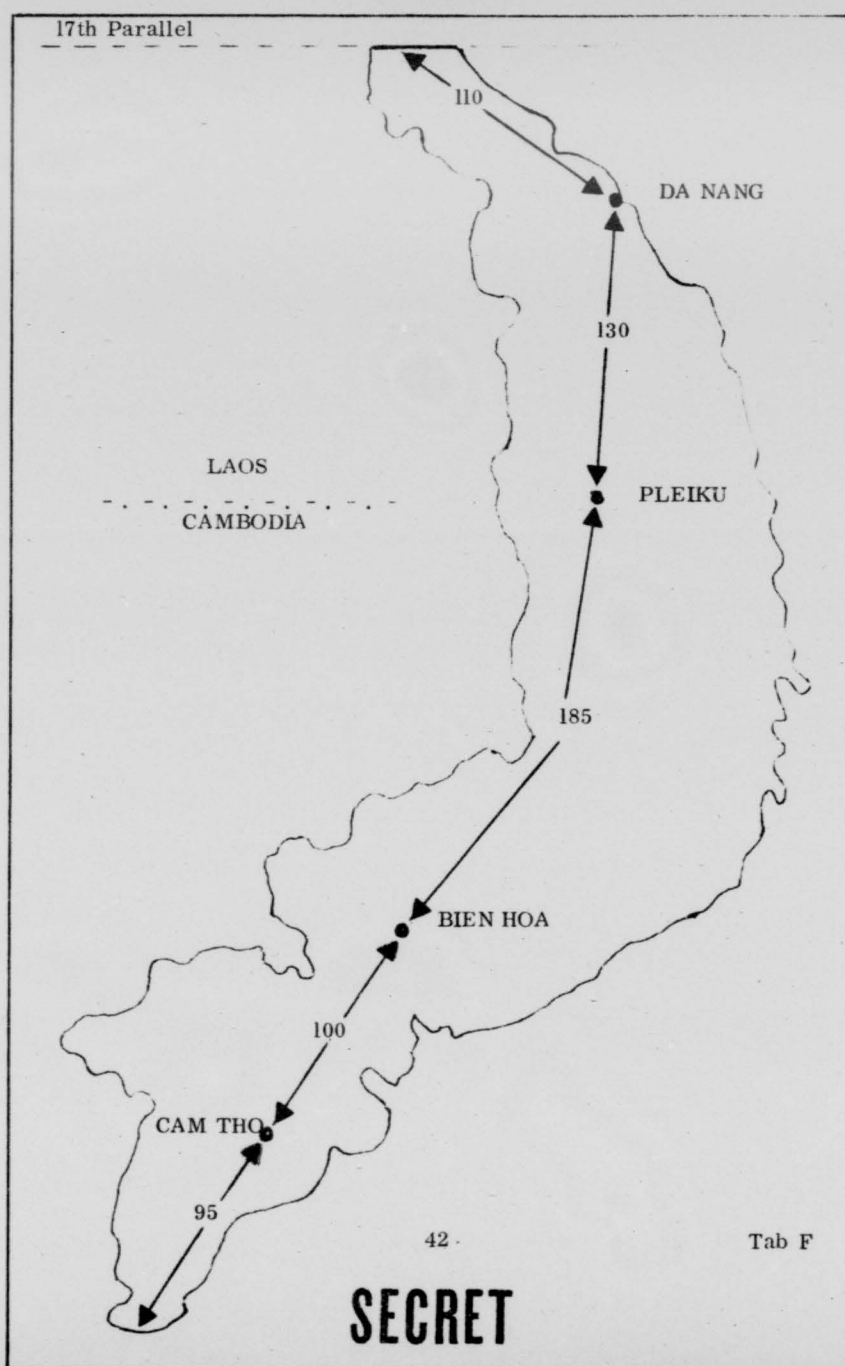
- a. The necessary support was available, including an airstrip suitable for evacuation aircraft.
- b. Forces were available to secure rescue facilities from hostile action while on alert.

2. Two SAR helicopters should be located at each base. This would insure continuous rescue coverage as well as allow for air/ground crew training; provide aircraft to supplement areas where an extensive rescue requirement existed; and, at the same time, maintain a rescue capability for the entire assigned area of SAR responsibility. Although the helicopters would function as LBR units, their primary mission would be Aircrew Recovery (ACR). Operational control of these forces would be vested in 2d AD AOC/Search and Rescue Control Center (SARCC).

3. Air Rescue Service helicopters (HH-43's) should be assigned the ACR mission pending receipt of a combat configured helicopter into the

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Air Rescue inventory.

4. Helicopter units should be manned with six pilots, six paramedics and six crew chiefs. An alert crew would consist of two pilots, two pararescuemen, and one crew chief. Variable combat conditions, inadequate navigational aids, mountainous terrain and marginal weather made the requirement for two pilots apparent. Pararescue crew members would operate as a team and provide on-the-spot medical assistance for survivors. The crew chief would act as hoist operator and in case of mechanical malfunction, his presence and knowledge would be invaluable.

5. Helicopters assigned to this mission must be configured with a minimum of 250 ft. of hoist cable. This specialized equipment would permit personnel pick-up in jungle areas without deployment of ground parties. At least 30% of the anticipated missions would require this equipment.

The 2d AD Commander gave full concurrence to the study and forwarded it to PACAF in November 1963. This approval, no doubt, accounted in part for subsequent actions that brought about the increased ARS force posture. During the following five months, the study bounced back and forth between the Military Assistance Command, Viet Nam (MACV) and the Commander in Chief, Pacific (CINCPAC). In the meantime, PACAF and ARS began the planning necessary to establish an adequate SAR force in Viet Nam.

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B. Requirements (Phase II)

As will be pointed out later in this report, the planning efforts that eventually led to the establishment of a professional SAR force did not provide for an orderly movement of ARS personnel and equipment into SEA. The urgency of the SAR requirement no doubt precipitated "crash planning" which resulted in many of the problems that generated throughout the course of the buildup.

Almost simultaneously with the Phase I study, and perhaps as a result of it, PACAF identified the requirement for a suitable ACR vehicle. On 18 November 1963, the Commander of the Air Rescue Service in a letter to the MATS Commander supported the PACAF position:¹²

We fully concur with PACAF's stated requirement for a suitable aircrew recovery vehicle (CH-3C) and attendant resources in South Viet Nam

Highly trained professional Air Rescue men, equipped with a minimum of six high-speed, long-range, all-weather CH-3C helicopters are most urgently required to comply with USAF, CINCPAC, PACAF, and MATS (WPS) Plans tasking Air Rescue to recover downed aircrews engaged in the "dirtiest war on earth." Air Rescue tasks in these plans stem from USAF policy and objectives stated in AFR 55-7, "Wartime Search and Rescue (SAR)." They are:

- a. The recovery of personnel.
- b. To deny the enemy a source of intelligence information.

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c. To contribute to morale of combat forces.

USAF wartime SAR policy and objectives are not being achieved in Viet Nam because the required resources are not available within Air Rescue Service to do the job. By utter default then, USAF combat aircrews are made dependent upon ill-equipped and ill-trained (for the task) U. S. Army and Marine Corps helicopter resources diverted to accomplish our mission Their noble efforts have wrought confusion and even disaster when engaged in some attempts to prosecute Air Rescue Service missions. In one case, disaster born of confusion took the lives of five times the number of people initially in need of Air Rescue. Two H-34 helicopters collided in mid-air attempting the rescue of a downed T-28 crew in the Da Nang region Had professional USAF Air Rescue Service forces been available, the techniques employed would have automatically averted collision and disaster. Air Rescue Service techniques and procedures had their baptism of fire in Korea. No finer confirmation of their validity exists than is attested to by the 9,219 lives saved by ARS helicopters in that war. Famed ARS "Battle-Taxi" helicopter operations fully achieved USAF wartime SAR objectives in Korea. With at least six ARS configured CH-3C's, and attendant resources, USAF wartime SAR objectives can be met with at least equal success in South Viet Nam.

For less than the equivalent cost of eight days aid support of Viet Nam, the U. S. can equip, train and deploy a professional air rescue unit of six CH-3C's to protect our most valuable asset, the trained combat aircrew. The U. S. has been supplying roughly \$200 million a year in economic aid to South Viet Nam, and about \$300 million in military aid. The bulk of these aid programs continued throughout the Buddhist crisis and the coup d' etat. Directly or indirectly, U. S. "Air Advisors" administer, direct, and train the VNAF with these funds. Such "training" has cost the U. S. at least 137 fatalities since January 1961. One hundred and nine have given their lives in direct combat actions against

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the Viet Cong Communists. For less than 3% of one year's American military aid dollar investment in South Viet Nam, U. S. airmen can be accorded the benefit of a professional Air Rescue Unit.

By having a minimum of 12 HH-3C's in PACAF, trained crews can rotate within the PACAF theater of operation. Thus, we recommend:

a. First, USAF priority be given the acquisition and assignment of 6 HH-3C's and attendant resources for combat aircrew recovery duty in South Viet Nam.

b. Second, USAF priority be given for the acquisition of 6 HH-3C's (for Pacific Area Squadron)

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In early 1964 confusion generated as a result of uncoordinated directives emanating from many different sources. This was evidenced in a letter from the PARC Commander to the ARS Commander dated 23 March 1964. Many false starts were triggered by PACAF due to a variety of reasons. PARC had been directed in no uncertain terms, on two different occasions, to deploy helicopters to the RVN as aircrew recovery vehicles. The proposed deployment generated considerable message traffic between CINCPACAF and HQ USAF. ¹³

For the long term, PACAF believed the deployment of six modified CH-3 helicopters, with their greater range and speed, would provide adequate coverage. Since the CH-3 would not be available immediately, the combat modified version of the USAF Local Base Rescue aircraft, the HH-43, would be a minimum acceptable interim vehicle. Some thought was given

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to deployment of this initial force. Hq ARS believed if CH-3's were used they could be located at two sites and provide SAR coverage for the entire country. If HH-43's were to be used, six HH-43's could provide satisfactory coverage by using the entire base structure in South Vietnam.¹⁴

Agreement on the use of HH-43B's was reached on a General-to-General basis, between PACAF and USAF via telephone. This gentlemen's agreement specified that PACAF and USAF would provide three aircraft each, all modified as outlined in an ARS study dated 17 January 1964. It appeared, however, that Air Force approval was imminent on the modification program for the HH-43B as a combat aircrew recovery vehicle. PACAF, supported by PARC, did not agree with modifying the HH-43's unless there was no alternative. It was their opinion that any available money should be applied against procurement of a more desirable and capable aircraft for the aircrew recovery mission.¹⁵

The commitment to fly reconnaissance missions (YANKEE TEAM) over Laos in May 1964 further emphasized the urgency for a military SAR force. Although Air America had a limited capability, their efforts alone could not be considered adequate. The 2d AD Commander recognized these limitations, and on 29 May 1964 requested PACAF authority to use U.S. aircraft and crews for SAR in Laos.¹⁶

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The need for these forces generated a meeting at Udorn, Thailand on 15 June 1964. As a result of the meeting, a plan was prepared which provided for Air America to furnish rescue coverage for the "Plaine des Jarres" area during all YANKEE TEAM missions. The newly established 2d AD Deputy Commander was made responsible for all USAF operations in Laos, including search and rescue. However, he was to act only at the request of and within the constraints imposed by the American Ambassador in Vientiane. The 2d AD Deputy Commander, Thailand, exercised control through his newly formed Air Support Operations Center at Udorn, Thailand, which coordinated very closely with the American Embassy's AOC at Vientiane. This plan indicated two USAF HH-43B's would be stationed at Nakhon Phanom (NKP), Thailand and two Marine HH-34's would be placed on alert status at Khe Sanh for operations in Laos.¹⁷

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SECTION III

FOOTNOTES

1. Ltr, HQ USAF to MATS, Subj: Urgent Requirement for Helicopter Units, 5 Feb 1963.
2. Ltr, Hq ARS to MATS, Subj: ARS Operation Plan 510, Local Base Rescue Contingency Force (LBRCF), Mobility and Organization, 1 Aug 1963.
3. Ltr, HQ USAF to MATS, Subj: Mobility Requirements for Local Base Rescue Units (LBR), 1 May 1964.
4. Second Air Division SAR Requirements Study, Republic of Vietnam, 1 Sep 1963, ~~p. 1.~~
5. Ibid., pp. 3-4
6. Ibid., pp. 4-5.
7. Ibid.
8. Ibid., pp. 5-6.
9. Ibid., p. 6.
10. Ibid., pp. 6-9.
11. Project CHECO Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-66) Continuing Report, 24 Oct 1966, ~~p. 15.~~
12. Ltr, Comdr ARS to Comdr MATS, Subj: Critical Requirements for MATS Professional Air Rescue Forces in Vietnam (C), 18 Nov 1963.
13. Ltr, Comdr PARC to Comdr ARS, 23 Mar 1964, ~~p. 1.~~
14. Project CHECO Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-66) Continuing Report, 24 Oct 1966, pp. 15-16.
15. Ltr, Comdr PARC to Comdr ARS, 23 Mar 1964, op. cit., p. 1.

(Section III Footnotes - continued)

- 5 16. Project CHECO, Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-66) Continuing Report, 24 October 1966, pp. 18-30.
17. Ibid., pp. 33-34.

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IV. SEA/SAR BUILDUP 1964-1966

A. Professional SAR Forces

In March 1964, USAF approved the transfer of three detachments to South Vietnam with a planned deployment date of June 1964. Preliminary action was taken to modify six HH-43B's on a priority basis. The contracts could not be let until approval was received to bring the helicopters into South Vietnam. The time required to modify the helicopters meant that the combat version would not actually arrive in SVN until Oct 1964.¹

By April 1964 the entire issue had yet to be resolved between CINCPAC and MACV. There were two principal reasons why introduction of SAR forces was delayed.²

1. The U. S. involvement under the JUNGLE JIM/FARMGATE programs was semi-covert; SAR forces would emphasize U. S. participation. In this same connection, in order to keep the operation covert, very strict ceilings had been placed on manpower. As it was, when SAR forces were approved, in May 1964, the ceiling had to be raised by 86 men.

2. A disagreement concerning which agency should be given the SAR mission developed between the Army, which possessed no professional SAR forces, and the Air Force, which did. The mission was eventually given to the USAF by Joint Chiefs of Staff (JCS) Directive.

CINCPAC's approval for the introduction of USAF SAR forces

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was finally obtained in May 1964. The Air Force SAR capability then began to expand rapidly from Det 3 PARC with only a coordination and control function to the 3d Aerospace Rescue & Recovery Gp (3d ARRGp) with four squadrons, fifteen detachments and two operating locations as of 31 March 1968.³

B. Arrival in SEA

The initial deployment of rescue forces in Vietnam was to have been made to Da Nang, Bien Hoa and Soc Trang. However, the need for SAR forces to support YANKEE TEAM operations in Laos altered this decision and the first rescue helicopters to arrive in the theater were placed on the Laotian border at Nakhon Phanom, Thailand. On 19 June 1964, 36 personnel with two HH-43B's arrived TDY from Naha, Okinawa, to form Detachment 3 (Provisional) of PARC. The 33d Air Rescue Squadron (33d ARS) at Naha was also ordered to send two HU-16's to Korat, Thailand, to perform airborne rescue control for Thailand and Laos. During the same period, the 31st ARS at Clark AB sent HU-16's to Da Nang for rescue duties in the Gulf of Tonkin.⁴

On 20 June 1964, PACAF announced Thailand-based USAF assets could be used for SAR. These and follow-on units, along with Marine helicopters from Da Nang and aircraft/helicopters from Air America, provided SAR coverage until USAF capabilities could be upgraded in the following year. Two days later, PARC informed PACAF that procedures for coordinating rescue between Air America and USAF resources had been

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established.⁵

The arrival of these aircraft signaled the end of the first phase of search and rescue in the RVN; the August 1964 Gulf of Tonkin incident ushered in the second phase. The rapid buildup in tactical forces dictated a proportionate increase in SAR forces. As a result, on 1 September 1964, the 1st Detachment (Provisional) and the 2d Detachment (Provisional) were organized at Bien Hoa and Da Nang, respectively. They were manned by TDY LBR units, equipped with HH-43B's. In November 1964, these units were redeployed to "out-country" locations after being replaced by PCS units equipped with HH-43F's, a combat modified helicopter.⁶

During the period of initial arrival of rescue units in SEA (June-December 1964), total forces in-theater consisted of Det 3, PARC, which was a permanent unit, five provisional HH-43B/F detachments and temporarily assigned composite elements consisting of HU-16's.⁷

Helicopter detachments were located at Bien Hoa and Da Nang, Vietnam; NKP, Takhli and Korat Air Bases in Thailand. Detachments were comprised of three aircraft and crews with support personnel at all locations except Korat and Takhli which were two-aircraft units. All units performed the LBR mission except the unit located at NKP which had an assigned mission of Aircrew Recovery. The two detachments stationed in Vietnam performed

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a secondary role of ACR even though their activity was extremely limited in this capacity.⁸

The temporarily assigned HU-16B composite elements principally located at Korat, but operating also from Da Nang, were augmented with aircraft, aircrews and maintenance personnel from the 31st ARS at Clark, the 33d ARS at Naha, and the 41st at Hamilton. Only two HU-16's were initially available in-theater. This was increased to three aircraft, crews and support personnel during FY 2/65. The primary mission of the HU-16 elements was precautionary orbits in support of YANKEE TEAM and QUEEN BEE.⁹

During FY 2/65, two HH-43F detachments were assigned to Vietnam PCS. Their primary mission was Aircrew Recovery with LBR as a secondary role. Each detachment was comprised of three aircraft, Det Commander, four aircrews, support personnel and five Pararescuemen (PJ) who were additionally qualified as firefighters. The provisional units at Bien Hoa and Da Nang were moved to NKP and Takhli; TDY units in-place at these locations were returned to their parent organizations.¹⁰

Following this initial buildup, the only constant in composition and structure of ARS forces was the change necessary to meet the ever-increasing tempo of tactical operations. These changes related to the establishment of

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the HH-43B detachment at Ubon and another at Udorn which was later augmented with an additional detachment. "Outside of the growing pains normally associated with establishment and gradual increase of forces in a primitive environment, no serious gap in the provision of Air Rescue Service prevailed until ROLLING THUNDER operations began (February 1965)." ¹¹

C. Problems

The opinion voiced by the Det 3 Commander (October 1964-October 1965) that no serious gap in the provisions of Air Rescue Service prevailed until ROLLING THUNDER operations began, intimated that no serious problems existed during this time frame.

The fact a Hq ARS staff officer was sent to SEA to obtain a firsthand picture of existing conditions indicated definite concern. Although his report dealt primarily with the deployment to NKP, he cited numerous problem areas which subsequently plagued other ARS units deploying to SEA. His report was submitted to Hq ARS in late 1964 and cited the following:¹²

Plans and Operations: The paramount problem in deploying the ARS forces was the lack of planning actions between 2d Air Division, PACAF and PARC. The 2d Air Division staff understood that the LBR unit could deploy to a "bare strip" and be self-sufficient. PARC and PACAF thought that 2d Air Division knew the manning and capability of ARS and expected 2d Air Division to furnish logistical support. Therefore, the necessary planning was, in fact, never accomplished prior to the actual move and for some two weeks thereafter.

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PARC Comment: PACAF OPORD 116-64 tasked 2d Air Division to provide host base support. Additionally, the logistics section of PACAF OPORD 116-64 tasked 13th Air Force to provide necessary housekeeping and station sets at the operating location. PARC feels that the PACAF OPORD was proper in every respect and that all contingencies had been anticipated. The fact that 13th Air Force and 2d Air Division failed to properly accept responsibility as directed by PACAF was not known to the PACAF staff until a series of messages were received from the ARS Det 3 Commander.

The move was made in accordance with PACAF OPORD 116-64. This order was written by PACAF and PARC personnel and dispatched on 14 June. Prior to this order, Det 3 had advised PARC that field conditions would prevail, but did not spell out what support would be furnished by 2d Air Division and what men and equipment PARC should deploy. The Det 3 Commander assumed that PARC would know that "field conditions" meant bring everything. On the other hand, the Vice Commander, 2d Air Division, DCS/O and DCS/M assumed that Rescue or PACAF would deploy a complete package including housing, field mess, cooks, security police, etc. Although it cannot be proven, their assumption apparently was based on statements by the ARS Det 3 Commander. Here, it is important to note that the Det 3 Commander assumed the functions of a complete staff for the move. According to the Det 3 Commander, he arranged with various sources to have rations, beds and bedding, fuel, power generators for lights, etc. flown in to arrive concurrently with the HH-43B's. All these arrangements were apparently handled by him alone. He was eager, aggressive and, in the opinion of the 2d Air Division staff, seemed to be getting the job done. Consequently, the staff did not exercise their normal functions. The same staff now recognizes the fallacy and agrees to take proper action now and in the future.

The LBR arrived at Udorn, Thailand The personnel and equipment were off-loaded and the Det 3 Commander directed the personnel and supplies be

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reloaded and flown to Nakhon Phanom, as he thought quarters were not available at Udorn. Previously, according to the Det 3 Commander, he had telephoned the 33d ARS and asked that the ATD and ETA be furnished so that he might coordinate arrival assistance. The 33d Squadron Commander claims to know nothing of this call but he did send a message The Det 3 Commander said the message was not received in Det 3.

Upon arrival at Nakhon Phanom, the men and supplies were off-loaded on the pierced steel planking (PSP) ramp about 1500 hours. No facilities existed or supplies. (Ref Tab G, Pictures 1-4). The men built a wood fire, prepared "C" rations, and slept under a shed. (Ref Tab H). The next day all but one officer and three airmen flew back to Udorn to assemble the helicopters. The assembly of the first helicopter commenced at 1530 and was finished at 0800 the following day. Lack of fuel prevented the test hop. In the meantime the four personnel who remained at Nakhon Phanom set about to prepare three old sheds for sleeping quarters, maintenance and supply, and cooking. At this point, ARS owned a base with 6000 ft PSP runway, a sizeable ramp, three ramshackle buildings, but nothing else including water or power. It was built last year and literally carved out of the jungle. (Ref Tab I).

Both helicopters were assembled and flown to Nakhon Phanom on 20 June. Fuel was arranged by the Det 3 Commander who visited Udorn and at that time acquired the information which he later included in the messages which will be discussed later.

Upon return to Nakhon Phanom the unit was operational but living facilities were non-existent. For two weeks the men ate "C" rations and slept in open-sided buildings. On 17 June an electrician arrived and put up wiring and lights. On 30 June the 35th TAC Gp, Bangkok was directed by 2d Air Division to assume logistical support. The Commander of the 35th TAC Gp visited the unit and immediately arranged for four carpenters to rehab the sheds, provide a field kitchen with cook and water trailer. This was the first formal support.

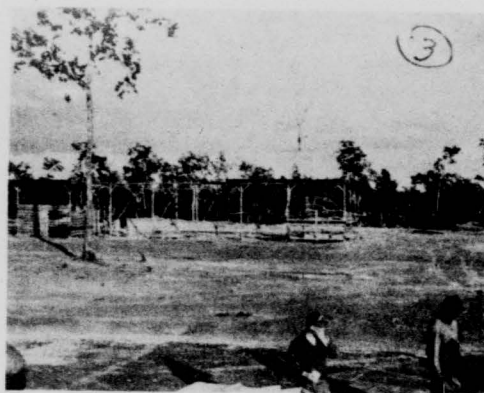
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ARRIVAL AT NAKHON PHANOM, THAILAND 17 JUNE 1964
(Figure 1)



OFFLOADED ON THE PSP RAMP
(Figure 2)



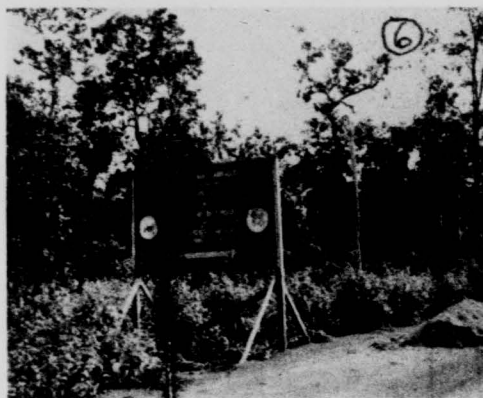
FACILITIES EXISTING UPON ARRIVAL AT NAKHON PHANOM
(Figure 3)



OTHER FACILITIES AVAILABLE UPON ARRIVAL
(Figure 4)



SLEEPING AREA UNDER A SHED
(Figure 5)



THE ENTRANCE TO NAKHON PHANOM AB, THAILAND
(Figure 6)

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The personnel have contributed much work and prepared three buildings, a mess hut, latrine, maintenance shack and are getting along barely adequately. (Ref Tab J, Pictures 7-12). Thirteenth Air Force deployed a Mobile Single Sideband (SSB) TACAN. (Ref Tab K).

LBR Commander is the base commander. Water is hauled from a small town ten miles away and the men now sleep in a "motel" in the same town. The alert hours are generally from 0800 to 1530. Much of the effort is devoted to housekeeping chores as well as maintenance on the aircraft, and improvising the aircraft and equipment for the mission. The airfield is located about ten miles west of the Mekong River which divides Thailand from northern Laos. Consequently, there is a constant threat of infiltration and sabotage. We made arrangements with 2d Air Division DCS/O to provide two air policemen who should be in place this week.

The only flying that had been done thus far was local training and if mission activity had been heavy ARS personnel could not have performed the mission and all of the housekeeping chores.¹³

Several problems were highlighted in this report. Helicopter blades were white and reflected the sunlight and needed to be painted a dull color. The entire aircraft needed to be painted a dull gray with no orange paint or markings. A flex and/or web type restraining device was necessary to inclose the rear of the cabin when the clamshell doors were removed. Crew members who worked in the cabin around open doors should be provided with an individual restraining harness. The long-range fuel tank was needed for

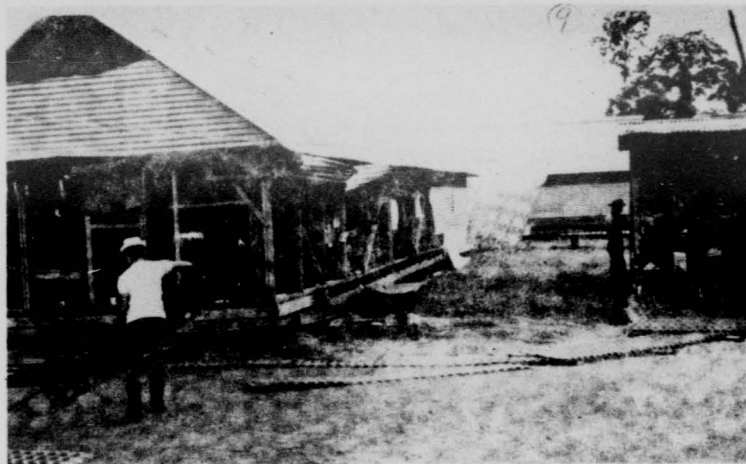
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AREA AFTER REHABILITATION
(Figure 7)



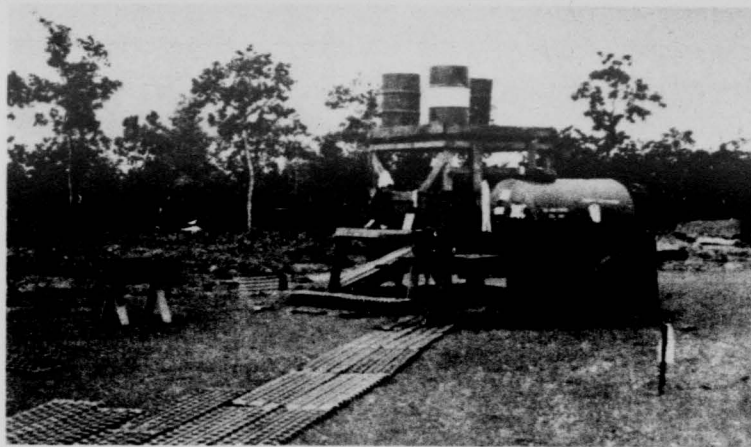
AEROSPACE GROUND EQUIPMENT STORAGE
(Figure 8)



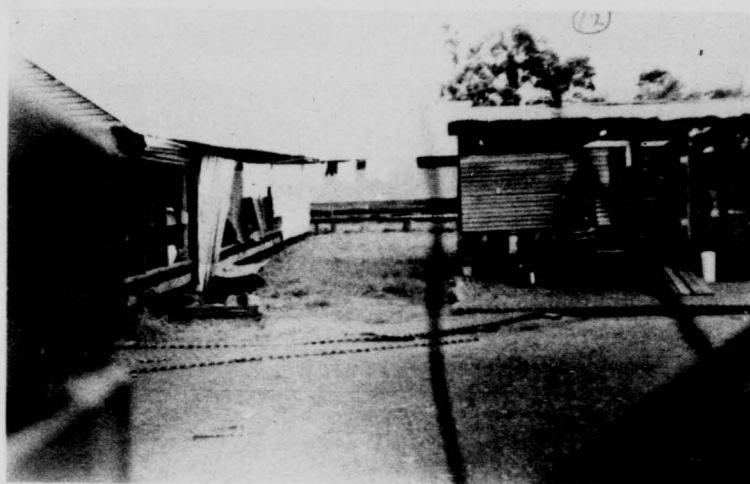
THE PROGRESSION OF THE REHAB PROGRAM
(Figure 9)



LATRINE AND EMERSION HEATERS
(Figure 10)



WATER TANK AND PERSONNEL WASH RACK
(Figure 11)



MESS HALL AND SUPPLY (LEFT) AND COOK SHACK (RIGHT)
(Figure 12)



LOW-FREQUENCY HOMER, TACAN AND COMMUNICATIONS ROOM
(Figure 13)

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the missions immediately, as the mission requirement exceeded the present range. The men had jury-rigged a 55 gal. drum which fed into a line in the cabin, but certainly was not the best. Pre-amplifiers for the ARA-25 were required.¹⁴

The report pointed out that the lack of training was an area of prime concern:¹⁵

The crew members do not have a good understanding of tactics, escape and evasion (E&E) and knowledge of enemy fire power techniques and capabilities. The briefing given by the Det 3 Commander was valuable but inadequate with respect to intelligence, E&E, and tactics. Intelligence information concerning location of enemy guns and troops was obtained from Air America. Consequently, the Deputy Commander, PARC is arranging for current intelligence, location and capabilities of anti aircraft (AA) guns, E&E and best tactics to be used. This will be done immediately. But aside from this, if we are to continue this mission plus other deployments that have been requested recently by PACAF, it is imperative that personnel be assigned PCS and adequately trained as outlined in our 563 Plan. The operational prestige of ARS and the lives of our personnel are at stake. Further, modified aircraft are a necessity now. We must insist on proper equipment and an opportunity to train the personnel in combat aircrew recovery.

The lack of communications between the 2d AD staff and PARC presented a problem as further evidenced by this report:¹⁶

... we have convinced the 2d Air Division staff that frequent communications with PARC are essential to plan and employ ARS forces properly. I feel sure that we will get better cooperation. There is a sense of urgency here

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as there was in Korea. People tend to think all that is necessary is to call or twx a requirement and it will be filled. Too often the staff planning function is overlooked. The Deputy Commander, PARC has already instituted a more orderly SAR system and made an in-road to the staff.

The report cited that ARS must make a greater effort to man Det 3 with the best qualified mission controllers available. This was due to the lack of time to train after arrival in Vietnam. Equally important, the 2d AD expected ARS to provide Rescue experts for this important mission. It was recommended controllers attend the jungle survival school prior to arrival in Vietnam by virtue of the fact these people were assuming on-scene commander responsibilities and actually working and living in the jungle.

No doubt, due to the lack of proper staff action prior to and during the arrival of the initial ARS units in SEA, it was recommended a Lt Col position be provided for the Det 3 Commander. This was necessary due to the requirement for a responsible Rescue trained staff officer to provide liaison with the 2d Air Division staff.¹⁷

With respect to materiel functions, the initial LBR units deployed with a Materiel Support Kit (MSK). However, certain parts were required after arrival in SEA which were not in the MSK. The unwieldy procedures required to requisition additional parts were as follows:¹⁸

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The unit calls in the part number to Det 3 via SSB. Det 3 then sends a message to the 33d ARS, which then orders the part. When the part is received, or it may be on hand, by the 33d ARS, it is shipped to Tan Son Nhut on 315th Air Division airlift and re-shipped to Nakhon Phanom via in-country airlift. This has not worked very well. Parts and equipment shipped to Tan Son Nhut have been lost. So as of two days ago, all items are shipped to 35th Tac Gp, Bangkok, for re-shipment to Nakhon Phanom. Since the 35th Tac Gp was charged with logistical support, they have a direct interest in the welfare of the unit and seem to get the parts delivered. . . .

The report recommended that prior to deployment of the six-aircraft package (modified HH-43B's) it would be wise for PARC to send representatives to 2d AD to finalize all logistical agreements. This would avoid a repeat of the current fiasco.¹⁹

Several messages had been sent from the Det 3 Commander to PACAF and PARC outlining discrepancies that immediately followed the initial deployment. The following problem areas were cited:²⁰

Only one blade support assembly was shipped. This is true. LBR detachments are issued only one based on one helio on the alert pad and one in the hangar. The 33d ARS was not aware that both helios would be parked in the open. PARC did not realize the full significance of "field conditions" and did not plan for a second set. This will have to be taken into consideration on future deployments. . . .

PARC Comment: Only one blade support kit is authorized for support of LBR size units. An additional kit was received from the 36th ARS, once the requirement was known; however, a transportation problem did

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result in an excessive delay in receiving the kit at the deployment site.

No parachutes shipped. True. We do not use parachutes on the helios and this item was overlooked both by PARC and the 33d ARS. Parachutes were later shipped but they cannot be worn with the flak vest, so they are left on the ground. If used they would have to be repacked at Bangkok.

No survival radios. This is not completely true. At least one ARC-11 and a Sarah transmitter per aircraft were shipped. This is all the squadron possessed. The unit now has ten URC-21's. All personnel deploying to SEA should have URC-21's.

No hand pump for JP-4 fuel. This is true, and although it is in the 510 Plan, it was overlooked. However, since fuel was to be furnished by 2d Air Division, it was reasonably assumed that a fuel delivery system would be included.

PARC Comment: The ARS 510 Plan was used by PARC in preparing the PACAF OPORD. No reference could be found that required a hand pump to be deployed with the helicopters. We have since reviewed the 510 Plan, including changes 1 and 2 and still find no reference to a hand pump requirement. However, page A-2 of the ARS 510 Plan does state, "POL, messing, billeting, and other housekeeping services will be provided from other sources." We assume that the requirement for a hand pump will be included in the Logistics Annex when published.

No ammunition was included for AR-15 rifles. This also turned out to be factual, but the Det 3 Commander was aware of this and had agreed to provide ammunition upon arrival.²¹

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No aircraft electrician or radio mechanic shipped with the unit move.

The 510 Plan called for this AFSC and it was considered essential. The matter was left to the commander of the parent unit (33d ARS) who thought these men would not be necessary. The report recommended PARC provide better guidance.²²

In summation, the referenced report indicated some of the allegation had merit. In any event, they were the result of poor planning initially, but could have been handled in a much more cooperative manner. The tone of these messages did not reflect a mature individual and certainly did not solicit cooperation. The messages had not been coordinated with 2d AD; had they been, they would not have been forwarded. Further, the lack of knowledge possessed by the Det 3 Commander and 2d AD concerning ARS LBR capability, plus lack of attention to planning by PACAF, PARC and 2d AD seriously degraded the deployment. It was recommended, for planning purposes, that the PARC staff conduct more frequent visits to 2d AD and ARS assistance could be requested if required.²³

The report further recommended:²⁴

If we are to maintain a unit at Nakhon Phanom, it should be PCS with fully trained personnel and proper equipment. This is not an exercise but is a shooting war. Further, our capability to deploy qualified combat recovery forces is extremely limited. It is dangerous to send unqualified men and inadequate equipment for

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this role. We should either prepare or get out of the business.

As a result of the Hq ARS staff visit to SEA and the subsequent report, a letter dated 30 July 1964 was forwarded from the PARC Commander to the ARS Commander. It emphasized that a fair amount of confusion existed between headquarters and the field units, particularly with respect to plans.

The letter outlined:²⁵

While on the subject of recovery, I would like to mention an item which has always been crystal clear in my mind, but recent incidents lead me to believe that my understanding may not be in accordance with your policies. Specifically, my reference is to Aircrew Recovery and the basic responsibility of ARS. Remarks made by your staff representative during his visit to the Pacific to the effect that ARS did not agree with the PARC action in deploying an LBR/ACR unit, combined with the contents of ARS message ARODC 281-G, creates the impression that the headquarters policy is contrary to our actions. We have voluminous correspondence on this subject from DCS/Plans and can find nothing contrary to our belief. I share the headquarters' concern about the continued use of unmodified helicopters and the attendant high risk potential; however, since we are a military fighting force and do not have adequate equipment to do the job, I feel we must do the best we can with what we have until some relief is available.

We are also evidently confused by the ARS 510 Plan insofar as application is concerned. Page 2 of the basic plan states that deployed helicopters may be applied against Rescue/Recovery support for deployed Air Force combat units, cold war support operations and USAF contingency plans. In attempting to apply this plan for assistance in the present PACOM contingency, we were informed that the 510 Plan is intended to cover short

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term contingency and special missions and could not be used for the contingency in progress. Within the meaning of the term "contingency" as used in the Pacific area, it is applied to any situation short of general war. Herein may lie the difference of opinion between ARS headquarters and PARC as to the application of the 510 Plan. We have always assumed that any "contingency" operation exceeding the Pacific resources would be supported from CONUS resources, on request. This assumption is evidently false.

To keep us on the straight and narrow path and to be assured that your policies and desires are adequately supported by PARC, it is requested that the problem areas mentioned above be clarified for our guidance and compliance.

Confusion did exist in the deployment of ARS forces to South Vietnam.

The PARC Commander was of the opinion that the ARS OPLAN 510 was the vehicle to be followed while Hq ARS cited the 563 OPLAN as the vehicle for deployment of ARS forces for this type of contingency. The following comments were provided by Hq ARS DCS/Operations and submitted to the ARS Commander on 10 August 1964:²⁶

The State Department has gone on record on several occasions indicating that operations in RVN will continue for an indefinite period since there is no immediate solution to the present situation. Since it is recognized that this will be a long term combat support operation, ARODC shares USAF's views that ARS OPLAN 510 does not apply in this case since it was designed for short term contingency requirements of a special nature and not for indefinite deployments. Informal information from Air Force indicates their opinion of "short term" should not exceed 30 to 60 days. LBF contingency forces as established by ARS OPLAN 510 were designed to provide the same support to tactical units operating from

advanced bases, i.e., fire suppression, crew recovery, as provided at the home station and not to operate in direct support of STRIKE forces in forward areas. Range restrictions and other limiting factors preclude the HH-43B from performing extensive combat aircrew recovery missions.

.....

PACAF Secret message PFODC 1-1332, 6 August, advises that two separate requirements exist for SAR in SEA. First, Local Base Rescue (LBR), Fire Suppression units, and second, Air Recovery units. This message further states that the LBR requirement can be filled by a short-range helicopter such as the HH-43B and that the aircrew recovery mission would require a long-range helicopter such as the HH-3C to satisfy this need. The same message advises that the Aircrew Recovery unit presently at Nakhon Phanom is a permanent requirement. We have been under a similar opinion that there are two separate and distinct requirements for SEA support. It appears that some of the confusion has been caused whenever a definition of these two separate requirements has not been stated clearly.

Hq ARS DCS/Plans provided additional comments to this controversy
in a letter to the ARS Commander dated 20 August 1964:²⁷

..... It "appears" as though Pacific Air Forces have been failing to follow the JCS procedures, i.e., the ZI based SAR requirements must be placed in the CINCPAC plan and forwarded to JCS for approval. When, and if these plans (or changes to an approved plan) are approved, it is our responsibility to see that resources are made available when a contingency plan is implemented. Unilateral PACAF plans can do nothing but create confusion when there are forces to be moved, and as far as MATS Hq is concerned, they will not take action on a unilateral plan. In this case I refer to unilateral as Hq PACAF, Hq MATS and below (not Hq USAF). If the CINCPAC plans do not include a sufficient SAR capability

I would recommend to Pacific AF that they see to it that this capability is added. It is the responsibility of the reviewing agency(s) as well as the originating agency to ascertain that each plan is as complete as possible.

. . . . Although it was our original opinion that ARS OPLAN 510 could be used for any contingency such as the one noted in the referenced letter, we now have the clarification that USAF only means to implement this plan on a non-tactical short term basis. If the contingency involves a lost aircraft in the wilds of New Zealand, the plan would be appropriate, but if the contingency involves a limited war in Korea, then the plan would not be used. Contingencies involving short tactical situations such as a limited war in Korea, should come through normal JCS directed actions. This would include the proper programming of ARS resources through the approved planning cycle, i.e. PACAF to CINCPAC to JCS to Hq USAF. I do not agree with the PARC Commander's statement that, "We have always assumed that any contingency operation exceeding the Pacific resources would be supported from CONUS resources, on request. This assumption is evidently false."

I would recommend a further paragraph to the PARC Commander that would indicate that although utilization of Continental US capabilities has been rather confusing in the past, we believe that it is gradually straightening out; also we should indicate that it has only been in recent months that efforts have been made to program state-side ARS LBR capabilities in PACAF war plans.

The PARC Commander shed further light on problems involved in the initial deployment of ARS forces in a letter to the ARS Commander dated 13 August 1964:²⁸

. . . . As you are probably aware, PARC personnel furnished representation on the PACAF Battle Staff continuously during the more demanding portion of this deployment. We were in a position to note the progress,

correct errors, and make recommendations for more effective use of the SAR forces. Being a member of the Battle Staff and having all information available on the Air Order of Battle (AOB) we were able to notice the lack of SAR forces and detect the fallacious planning on the part of the CINCPAC staff. This erroneous conception of complete deployment forces can be attributed to a single procedure -- the retention of coordination, decision making and approval authority at the JCS-CINCPAC level. When queried on the absence of SAR forces, even though they are properly included in the appropriate plan, the answer indicated that they had been overlooked by the CINCPAC staff. It took many hours to correct this oversight and secure JCS approval, political clearance and CINCPAC authority to move the forces.

The discussion above points out the erroneous nature of the concept under which we are presently operating -- that of considering SAR a separate package from the tactical forces. In my opinion, when tactical forces are deployed under the same set of circumstances as existed in this case, it is mandatory to consider the SAR forces as an integral part of the deployment. The presence of the ARS forces in the operating area is as important to morale and well being as the cooks, bakers and field maintenance personnel. In many cases, the ultimate success of a tactical operation may well depend upon the rapidity of ARS deployment and the effectiveness of employment when in place. We in ARS have been highly successful in publicizing our precautionary orbit service, sometimes to the point where tactical operations are aborted due to the absence of such service. I feel we should seek the same degree of recognition for our in place support of tactical forces deployed to remote areas.

The PARC Commander further outlined that this particular deployment operation afforded the opportunity to exercise the ARS 510 Plan but, unfortunately, from his vantage point it did not go as smoothly as planned. It was his impression that the CONUS LBR units were not properly prepared

or equipped to implement the ARS 510 Plan under emergency conditions.²⁹

The ARS Commander summed up this deployment problem in a letter to the PARC Commander dated 31 August 1964. He emphasized that in war planning the ARS Zone of Interior (ZI) capability must be programmed in the proper manner which included the placing of these requirements in the appropriate contingency plans and obtaining JCS approval. "When the rescue forces are approved in a contingency plan by JCS, they, of course, are automatically released when the contingency plan is implemented." By placing the requirement in the CINCPAC plans this in turn would add emphasis to ARS receiving adequate forces to meet these requirements.³⁰

The ARS Commander also indicated that the ARS OPLAN 510 had contributed to the deployment problem. The complete reason as to why USAF did not intend to use the 510 Plan for tactical situations could not be explained.³¹

An analysis of the correspondence between the PARC Commander and Hq ARS, covering the initial deployment of forces to SEA, quite clearly points out how the PARC Commander arrived at the decision to deploy these initial forces under ARS OPLAN 510. Although DCS/Operations at Hq ARS did indicate:³²

We believe that the Commander, PARC, as a means of expediency, has relied on the ARS OPLAN 510 rather

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than the ARS OPLAN 563 which is designed to provide a permanent, rather than temporary aircrew recovery force in support of extended combat operations.

The ARS Commander as late as 31 August 1964 made no mention of ARS OPLAN 563 but stated only "It may be necessary for us to write another plan, or amend 510, or just talk Hq USAF into saying that 510 will apply."³³

The ARS OPLAN 563 was not an operations plan, but an ARS Programming Plan 563 published in April 1964. This plan was specifically designed to deploy two PCS ARS detachments, equipped with six modified HH-43B's, to Bien Hoa and Da Nang in the RVN. The 563 Plan could not have been used to deploy the initial forces to NKP as this was a TDY deployment.³⁴

The ARS Programming Plan 563 recognized the problems in organizing, moving and activating new units for SEA. Although PACAF, 13th AF and 2d AD accepted responsibility for certain actions, these actions were evidently overlooked in the accelerated buildup of USAF forces in the RVN. When the permanent unit arrived at Bien Hoa in October 1964, no planning or preparation had been made to provide facilities other than billeting. ARS requirements were made known to the Deputy for Materiel who agreed to build the facilities from "in-house" capability, provided the recent VC attack on Bien Hoa did not interfere. The Deputy for Materiel indicated he would have available for ARS forces two 25' x 50' buildings erected in the helicopter operating area as a permanent home. These two

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buildings, combined with one air conditioned alert trailer and tents for storage, would make a suitable facility.³⁵

At Da Nang, ARS had considerably less luck in securing facilities. Da Nang had an extensive construction program underway, but it was also the most active airfield in the RVN. As a result, ARS did not have adequate facilities for the unit and when the PARC Commander visited in November 1964 nothing was programmed. This item was discussed with 2d AD, 13th AF and PACAF. ARS requirements were made known and inserted into the programmed expansion of Da Nang; however, January 1965 was the earliest ARS could expect any suitable facilities. In the meantime, they continued to operate with the marginal facilities previously used by the TDY unit.³⁶

Supplies of all types were a problem during this time period including such items as office furniture to support the two PCS units at Bien Hoa and Da Nang. Very little of this type of equipment was available. Although it had been requisitioned, ARS personnel were unable to locate any of these items for issue.

Despite these existing deficiencies in facilities, office furniture, etc., there was a noted increase in mission activity for the HH-43F's, as evidenced by reports emanating from Vietnam. The PARC Commander indicated the HH-43F was adequate to perform the vital ACR mission on an interim basis.

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but it could not be considered an ideal vehicle due to serious performance deficiencies. Auxiliary tanks had been installed for extended range; however, the helicopter still did not possess the range required to be applied "across the board" to all ACR missions in SEA. The PARC Commander believed ARS should be working on an ACR vehicle with a 350 to 400 mile radius of action. He based this on the fact the HH-43F range performance was adequate for most operations in the RVN, but that ARS must be concerned with the assigned ACR responsibilities in the event they were forced out of the RVN environment. He was most impressed with the HH-3C and felt that, with certain modifications to fit the combat role, it would be the eventual answer to world-wide effective wartime aircrew recovery as well as long-range recovery during peacetime.³⁷

ARS activity in SEA in support of tactical operations maintained a fairly steady tempo throughout 1964. As of 7 November 1964, ARS had expended 1,628 total flying hours, with the HU-16 accomplishing 1,281 of this total.³⁸

In late 1964, CINCPACAF and PARC conducted a joint study to determine future search and rescue requirements in SEA. The study was made in response to an ARS request in October 1964. The results of this effort were outlined in a letter from the Vice Commander in Chief, Pacific Air Forces to Hq ARS dated 15 December 1964.

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The continuous and unpredictable fluctuations of the political and military situations in SEA made it extremely difficult to determine firm future SAR requirements. The current and programmed activities in SEA (Ref Tab L), past performances of ARS forces TDY to SEA (Ref Tab M) and contingency operations plans were analyzed to determine the extent of ARS support required by the current situation.³⁹

The following assumptions were made:⁴⁰

1. The present tactical force would remain in the Philippine/SEA area for an indefinite period.
2. The tempo of operations would continue at the same rate or increase in intensity.
3. Rescue forces would be required "in-place" for quick reaction and immediate operational support of requirements originated and promulgated at the DOD/JCS level.
4. PACAF forces would be required to react and respond within two to twelve hours after notification.

Current activities and contingency operations plans required ARS rotary-wing aircraft for combat aircrew recovery and LBR support of USAF tactical operations. The number of sorties and flying times shown in Tab M, the necessity for daily alert posture in Thailand and a continuous alert posture in the RVN substantiated the rescue helicopter requirement

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CURRENT AND PROGRAMMED ACTIVITIES IN SOUTHEAST ASIA

<u>NICK NAME</u>	<u>DESCRIPTION</u>	<u>FREQUENCY</u>	<u>RESCUE REQUIREMENTS</u>
LIMA MIKE	Rotation of jet fighter aircraft from CONUS to Clark AB and/or SEA and return. Three squadrons plus one augmented squadron are scheduled to rotate in Feb 1965. These aircraft are normally stationed at Clark AB and periodically rotate in and out of SEA as the mission dictates.	Semi-annually CONUS to Clark. Three to five flights weekly between Clark AB and SEA.	Precautionary orbits Zebra Bravo and Zebra Delta on the semi-annual rotation; Zebra Delta or Zebra Charlie on the weekly flights between Clark and SEA.
CANDY MACHINE	Jet fighter movements between Clark AB and SEA for Air Defense reasons. Usually there is little if any advance notice of these flights.	As the mission dictates. Usually one per week.	Precautionary orbit Zebra Delta or Zebra Charlie with little advance notice.
YANKEE TEAM	Reconnaissance missions over the central (Plaines des Jarres) and panhandle regions of Laos.	2 USN/USAF Recce missions per day during daylight hours. Proposed 1.5/RB-66 missions per night.	Average of three HU-16 precautionary orbits per day and continuous helicopter alert at Da Nang and Nakhon Phanom. Helicopter strip alert at a forward operating base (usually Quang Tri) is presently being provided by

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Tab L

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Tab L.
(cont)

LUCKY DRAGON	Reconnaissance	Ten per month.	Marine H-34 helicopters. HU-16 strip alert at Da Nang. Helicopter strip alert at Da Nang, Nakhon Phanom and Bien Hoa.
QUEEN BEE	Reconnaissance	Daily	One HU-16 precautionary orbit daily.
COPPER COIN	Reconnaissance	Daily	One HU-16 precautionary orbit. Helicopter strip alert at a forward operating base presently being provided by Marine H-34 helicopters from Da Nang.
BOX TOP AND OTHERS	Tactical and reconnaissance type missions in the general area of the Gulf of Tonkin that are generated on a day to day basis as the mission dictates.	Three per day in the past. Predicted one per day in the future.	One and sometimes two HU-16 precautionary orbits per day and eight to twelve hours of helicopter strip alert per day at Da Nang and a forward operating base, usually Quang Tri.
VIETNAM-GENERAL	Tactical, reconnaissance, and training missions operating from all four Corps areas on a day to day basis as the mission dictates.	Continuously during the day and often at night as a result of Viet Cong activity.	Continuous aircrew recovery capability to cover the RVN land and coastal areas. Local base crash rescue coverage for the main operating bases

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Tab L
(cont)

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THAILAND-
GENERAL

Reconnaissance and training missions operating from Korat, Takhli, Don Muang, and Udorn. The actual number of aircraft operating from these bases fluctuates frequently as the mission dictates, however the primary support is for TDY F-100 and F-105 aircraft.

Daily during daylight hours and occasional night reconnaissance missions.

of Da Nang, and Bien Hoa/Tan Son Nhut complex.

Local base crash rescue coverage for the main operating bases of Korat and Takhli. Precautionary orbits for reconnaissance missions and normal SAR for activities concerning USAF forces in Thailand.

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MISSION ACTIVITIES OF TDY ARS FORCES

<u>LOCATION</u>	<u>AIRCRAFT</u>	<u>June</u> <u>Sorties/Time</u>	<u>Jul</u> <u>Sorties/Time</u>	<u>Aug</u> <u>Sorties/Time</u>	<u>Sep</u> <u>Sorties/Time</u>	<u>Oct</u> <u>Sorties/Time</u>
Bien Hoa	HH-43B	-	-	62/24	132/61	94/44
Da Nang	HH-43B	-	-	50/20	100/50	79/34
Korat	HH-43B	-	-	32/10	64/23	50/30
Takhli	HH-43B	-	-	4/3	8/6	32/13
Nakhon Phanom	HH-43B	0/0	0/0	0/0	0/0	2/1
Da Nang	HU-16	9/33	43/211	53/294	27/116	45/223
Korat	HU-16	-	-	20/57	30/112	49/185

The above figures do not include flying time expended for training and maintenance.

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Tab M

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requested by PACAF.⁴¹

The Vice CINCPACAF pointed out:⁴²

. . . . The HH-43B and F model helicopters presently assigned are only marginally suitable for the ACR mission and should be replaced without delay by a more suitable ACR vehicle such as the HH-3C. . . . The ACR capability should provide quick reaction coverage for all of the RVN land and coastal areas and should extend as far as possible into Laos and North Vietnam to support reconnaissance missions and known contingency plans. The Republic of Vietnam (RVN) is divided into four Corps areas, each of which should have its own responsive SAR support for quick and effective rescue/recovery actions. The LBR capability should cover the main operating bases of Korat, Takhli, Da Nang, and the Bien Hoa/Tan Son Nhut complex since all tactical aircraft in SEA are combat configured, thus requiring maximum LBR fire suppression and crash rescue protection. The HH-43B and F model helicopters are capable of providing this support, however, the F model is recommended for Vietnam because of the combat environment and the specialized configuration of this aircraft. Also, three helicopters per LBR unit in RVN are recommended because of the off-base exposure rate and the close proximity of hostile forces which require the helicopters to operate in pairs and to get in and out of incident sites quickly before enemy forces can congregate and make the area insecure.

PACAF recommended the following ARS helicopter force structure for Southeast Asia:⁴³

1. Bien Hoa, RVN:

- a. One ACR unit of three combat-modified HH-3C helicopters to provide an aircrew recovery capability in the III Corps area.

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b. One LBR unit of three HH-43F's to provide local base crash/rescue coverage for the Bien Hoa/Tan Son Nhut complex which had a very high density of both tactical and normal air traffic. The three HH-43F's presently at Bien Hoa could be retained to satisfy the LBR requirements.

2. Da Nang, RVN:

a. One ACR unit of three combat-modified HH-3C's to provide an ACR capability in the I Corps area.

b. One LBR detachment of three HH-43F's to provide local base crash/rescue coverage for tactical forces consisting of numerous USAF jet fighter aircraft and various types of VNAF aircraft to include A-1E's and A-1H's. Current planning indicated the possibility of a large influx of USAF tactical aircraft at this base for interdiction, retaliatory and/or contingency operations. The three HH-43F's in-place at Da Nang could be retained to satisfy the LBR requirements.

3. Pleiku, RVN: One ACR unit of three combat-modified HH-3C's to provide an ACR capability in the II Corps area and the southern tip of Laos.

4. Can Tho, RVN: One ACR unit of three combat-modified HH-3C's to provide an ACR capability in the IV Corps area.

5. Nakhon Phanom, Thailand: One ACR unit of three HH-3C's to provide an ACR capability for reconnaissance and tactical missions in the southern panhandle of Laos and for extension into the "Plaines des Jarres"

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area was required. The present situation indicated this would be a continuing requirement. Although Tab M reflects very little mission activity at this location, it was considered essential because of its strategic location near the Laos panhandle. The NKP helicopters provided the only immediate ACR capability in the event of an emergency SAR mission in that area.

6. Korat, Thailand: One LBR detachment of two HH-43B's to provide local base crash/rescue coverage for tactical and training operations. Although the number of tactical aircraft operating from this location varied from day to day, the primary support was for TDY F-105's.

7. Takhli, Thailand: One LBR detachment of two HH-43B's to provide local base crash/rescue coverage for tactical and training operations. The number of aircraft operating from this location varied from day to day as the mission dictated.

PACAF recommended MATS take the following actions to provide the required rescue helicopter support for SEA: ⁴⁴

1. Provide fifteen HH-3C's, required personnel and equipment on a PCS basis to comprise the ACR units as outlined above. It was reiterated that the HH-43F's currently at Da Nang and Bien Hoa and the HH-43B's currently TDY to NKP were marginally acceptable as an interim ACR helicopter and should be replaced without delay by the more capable HH-3C.

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2. Provide six HH-43F's, required personnel and equipment on a PCS basis to comprise the LBR detachments at Bien Hoa and Da Nang. It was pointed out that the HH-43F's currently in-place could be diverted to satisfy this requirement after the HH-3C's were in-place for the ACR mission.

3. Continue to provide from CONUS resources four HH-43B's, required personnel and equipment on a rotational TDY basis to comprise the LBR detachments at Takhli and Korat.

The requirement for ARS fixed-wing aircraft in SEA was well validated in Tab M which revealed that TDY HU-16 aircraft had averaged 313 mission flying hours per month for SAR support of tactical and reconnaissance missions into Laos, Democratic Republic of Vietnam (DRV) and Gulf of Tonkin areas. This flying hour activity did not include the hours expended for redeployment to the respective home stations for maintenance and crew rotation, and likewise, did not include training hours accomplished at the deployment sites. During October alone, 408 HU-16 mission hours were flown necessitating deployment of five and sometimes six aircraft and crews on a continuous TDY basis. These aircraft were engaged in providing continuous SAR alert, daily strip alert, precautionary orbits and on-scene SAR control for high priority tactical missions levied by JCS. It was essential that ARS continue to provide three HU-16's at Da Nang and two HU-16's at Korat to provide this support. This requirement was established by CINCPACAF OPORD 120-64

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⁴⁵
dated 5 August 1964.

It was noted the accumulative effect of current TDY rotations and a manning factor of 1.0 had caused a drastic degradation of training and maintenance programs, and local SAR capability of both the 33rd and 31st Air Rescue Squadrons, which were providing the TDY personnel and aircraft. The problems caused by the loss of TDY aircraft and crews from the home station was compounded by the fact that each squadron currently had an aircraft in Inspection Replacement as Necessary (IRAN) with one additional aircraft scheduled to IRAN during March and May of 1965. The end result was each squadron usually had two aircraft at the home station with one just returning from SEA requiring extensive maintenance and inspection. This left one aircraft for SAR alert and aircrew proficiency training. Augmentation from the HC-54 squadrons alleviated the problem somewhat, but the dissimilar equipment compounded administrative, supply, and maintenance problems.⁴⁶

To alleviate this critical situation the Vice CINCPACAF recommended that ARS:⁴⁷

Assign four additional HU-16 UE aircraft to the 33d Air Rescue Squadron.

Increase the manning factor to allow a continuous TDY rotation of five HU-16 aircraft, aircrews, and support personnel to SEA while continuing effective maintenance and training programs and normal SAR coverage of the assigned area of responsibility. The manning should be based on a utilization rate of 50 flying hours per month

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per aircraft.

Augment the 33d ARS with TDY aircraft and personnel as an interim solution until PCS aircraft and personnel can be assigned.

Provide Mobile Spares Kits (MOSPAKs) to support the flying hour program of 50 hours per month per aircraft. These MOSPAKs will have a spares level capable of supporting the flying hour program resupplied through STAR procedures (Speed through Air Resupply) Volume I, Chapter 15, AFM 67-1.

The demands for Rescue and Recovery Service were generally satisfied with existing equipment until the ROLLING THUNDER operation began in February 1965. ROLLING THUNDER followed by STEEL TIGER resulted in greater demands for Rescue service which could no longer be met with existing equipment. Improvisation to meet these demands accelerated the number and frequency of changes. These changes related to the loan of two TAC CH 3C's in July 1965, move of HU-16B base of operations to Udorn and later to Da Nang, introduction of HC-54's, assignment of four additional HH-43's and establishment of an LBR unit at Tan Son Nhut. ⁴⁸

The problems encountered throughout all facets of operation and support were many and varied. None of the problems were surprising or beyond comprehension considering the primitive nature of the surroundings from which forces were committed to support unprecedented type of operations with a severely limited quantity of antiquated equipment.

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Regarding facilities, the major problem stemmed from lack of vertical structures to accommodate equipment and personnel at locations from which ARS was required to operate. The establishment of additional units with an ever-increasing force structure made the facilities problem one of a continuing nature. Generally speaking for those in-place ARS units (October 1964), the problem stemmed from a lack of ARS supervisory personnel making requirements known to the proper agency. "Commanders of Provisional units were disillusioned and disgruntled for the most part and exercised little or no initiative toward improving their residential environment." Upon arrival of a new Det 3 Commander in October 1964, this problem was readily identified and resolved by submission of requirements to the proper authority for action.⁴⁹

. . . . In every case, requirements were recognized and materialized, influenced only by availability of materials and orders of priority. Self-help by ARS personnel, in many instances, not only contributed to facility improvement but promoted the approval of facilities which otherwise would not have been obtainable. . . .

Problems encountered in maintenance during this period paralleled those in facilities. Mainly, they stemmed from a lack of spare parts and delayed deliveries due to a long supply pipeline. As in the area of facilities, very little effort was being exerted to improve the situation. In fact, during the June-December 1964 period, the aircraft in-commission rates were so low as to prompt an ultimatum from the 2d AD Commander through his

maintenance director to show improvement or withdraw the forces. This problem was readily identified and again resolved in a relatively simple manner by making the requirements known to the proper agency or individual.⁵⁰

In addition to the establishment of supply, administration and discipline, the ARS Supply Liaison Officer at Warner-Robins Air Materiel Area (WRAMA) was contacted via telephone, on a weekly schedule, to expedite the acquisition of necessary parts and supplies. In coordination with the Director of Maintenance, 2d AD, procedures were established whereby aircraft requiring extensive repair would be depot repaired by in-theater depot detachments. Although maintenance in the area of records and reports was not practiced in accordance with AFM 66-1, the high in-commission rates achieved by the HH-43 units, from October 1964 to October 1965, attest to the absence of insurmountable problems in this area.⁵¹

Problems encountered in the operational concepts area were multitudinous.⁵²

. Whereas, concern in the maintenance and facilities area was limited to representative offices, the audience in the operational area was extremely vast. Although laudatory communications flowed like wine following successful recovery endeavors, the criticism following failure, regardless of circumstances, descended from all quarters like an avalanche. Oftimes, vicious attacks were made upon operational methodology from unqualified sources. Frequently, devotion to

advancement and refinement of tactics and techniques was degraded by the necessity to defend sound and logical concepts of operation. Not unlike the swatting of gnats while in the midst of a herd of stampeding elephants, much time and effort were consumed by demanding involvements in trivial matters which contributed nothing to operational effectiveness.

Since operational concepts and procedures for the LBR mission in SEA were not unlike those in other areas, no difficulties were encountered in this facet of operation. When it came to the Rescue and Recovery operations, each mission generally presented its problems as to force requirements and the tactics and techniques of force employment. Since operation such as that experienced was unprecedented, the initial efforts were played by ear so to speak. Initially, all Rescue and Recovery efforts were directed and controlled from the JSARC or through an on-scene mission commander from the JSARC.

Despite rapid turnover of experienced personnel, operational concepts and procedures described in ARSM 55-1 and 2d AD SEA SAR OPORD 402-65 provided information and guidance necessary for effective accomplishment of search and recovery within the then involved area of operations. As an adjunct to the manual and OPORD, additional guidance was issued in the form of 2d AD regulations and incorporated in MACV publications, as appropriate. As the range of tactical operation increased, existing concepts for employment and application of rescue forces was invalidated. This applied mainly to the continental and not the maritime areas of responsibility.

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No difficulty was encountered in directing, controlling, coordinating and reporting on a mission involving search and recovery by HU-16's in the Gulf of Tonkin. On the other hand, the exercise of coordination/control and

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(This page is Unclassified)

reporting by the JSARC for rescue efforts at distant ranges over continental regions was ineffective for various reasons. The main reason was a lack of comprehension by JSARC controllers as to force requirement and lack of on-scene knowledge for effective and efficient employment of forces involved. A secondary reason (and the one that presented the majority of difficulty encountered) was the fact that operational control of tactical forces subsequent to mission commitment was exercised by the Commander, 13th AF. To satisfy the tactical force requirements for Rescue support under the circumstances existing, a RCC manned by qualified and capable rescue personnel was established to support the Commander, 13th AF. This RCC was intended to serve as an extension of the JSARC which reserved pre-emption authority in case of questionable practice or procedure engaged in or emanating from the RCC.

Lack of reliance upon the Rescue experienced personnel assigned to serve the 13th AF Commander rather than deficiency in equipment, organization, or published concepts did on several occasions contribute in various degrees to mission failure.

To overcome conceptual problems compounded by diverse opinion from self-proclaimed experts who obviously lacked any knowledge whatsoever in the state-of-the-art, publication of a manual covering Rescue tactics and techniques based on lessons learned and experience gained was undertaken. An elapsed period of two years following publication of 2d AD Rescue Manual 55-1, before revision, attests to the validity of operational concepts, tactics and techniques as initially and originally set forth in the manual.

D. High-Level Interest

Throughout 1965 the requirement for rescue forces increased at a more rapid rate. These requirements were met by deployment of ARS forces on PCS. Some LBR units and the HU-16 units in SEA were still on

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a TDY status; however, action was underway at this time to convert these units to PCS.

During September-October 1965, the MATS Commander and the ARS Commander conducted personal tours of SEA combat air rescue/recovery units. Conditions encountered on these respective visits clearly revealed unacceptable deficiencies and limitations throughout the entire combat/recovery system. On 28 October 1965, the MATS Commander presented a formal briefing concerning this subject to the Chief of Staff, USAF, and selected members of the Air Staff. This briefing covered background, current situations, deficiencies, corrective actions in process, and specific recommendations to HQ USAF for further improvement.⁵⁴

The briefing pointed out that as of October 1965, ARS had one squadron at Tan Son Nhut with ten helicopter detachments in Vietnam and Thailand. The detachments had a total of 28 short-range helicopters. In addition, there were four HH-3C's and one CH-3C in the theater, with two additional HH-3C's to be delivered in December. New detachments were authorized at Binh Thuy and Pleiku, but would not be physically in-place until later that year. It was also pointed out ARS operated four HC-54's from Udorn and five HU-16's from Da Nang.⁵⁵

The briefing outlined:

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With this force structure, the following tactics are employed to search for, locate, and recover downed combat personnel. Direction for preplanned missions comes from the 2d AD frag order, and the 38th Squadron alerts and directs rescue forces to meet mission requirements. These include: fixed-wing orbits by HC-54's along the Thailand border and HU-16 orbits in the Gulf of Tonkin area. These aircraft act as forward on-scene mission command posts to coordinate and control recovery activities as required. The frag order may also specify that the helicopters will be prepositioned at advanced locations that are as close as possible to the planned strike areas, such as Site 36 in northern Laos. Within their limited range capabilities, the helicopters are scrambled by the orbiting rescue fixed-wing aircraft as required. In addition to the helicopters operating forward, a scramble alert posture is maintained by each detachment to meet any emergency within their capability.

Rescue Combat Air Patrol (RESCAP) and hostile fire suppression are furnished by tactical forces. Two-way radio communications are maintained between STRIKE and ARS forces. Rescue aircraft in orbit maintain continuous radio contact with directing agencies.

As the tactical mission activity has rapidly expanded in SEAsia, the outdated equipment has seriously restricted our capability, and we have been forced to rely upon the HH-43 and HU-16 as our primary combat recovery vehicles.

The HH-43B was designed and procured specifically for the LBR mission. It was not envisioned to be used for the combat recovery role. By carrying additional 55 gal. drums of fuel, the radius was extended to equal that of the HH-43F, but still was inadequate for recovery operations in NVN even by staging out of forward sites in Laos. The emergency loan from Tactical Air Command (TAC) of two CH-3C's had helped some, but it

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likewise did not fully meet the range, speed and loiter requirements. However, by staging from the forward sites in Laos, the CH-3C's could reach any point in the northern portion of Vietnam. One of these unarmored CH-3C's was lost, due to enemy action on 6 November 1965, while attempting to recover a F-105 pilot in NVN.⁵⁶

It was cited in the briefing that the HC-54 and HU-16 were not compatible to the combat/recovery mission. Both were restricted in speed and ceiling, with no recovery capability over land. The HU-16 had a limited capability only when daytime water conditions permitted. However, with these inadequate forces, as of October 1965 ARS had successfully saved 70 combat personnel. Of these 70 saves, 60 were combat crew members. These 70 saves resulted from 177 requests which gave ARS only a 34% effectiveness rating. The MATS Commander believed this percentage could be and must be improved.⁵⁷

Major deficiencies in equipment were hampering effective recovery operations. Not only were the assigned aircraft woefully inadequate for the SAR mission in the SEA environment, but lack of adequate personal survival equipment posed an equally serious problem.⁵⁸

Besides the limitations in range of the HH-43B helicopters. . . this small aircraft is limited to daylight VFR operations. Its top speed is 90 knots, there are no provisions for crew or aircraft protective armor, and it is single-engine.

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The HH-43F has been especially configured for aircrew recovery in SEA, with crew and component protective armor, an upgraded engine, and shatterproof glass. However, it is only marginally capable of limited instrument and night operations; the radius of action is only 130 nautical miles and no increase in speed has been achieved.

The CH-3C was bought by the Air Force as a general utility helicopter. This aircraft is not configured for combat operations, and does not have auxiliary tanks for extended range or loiter. In addition, there are no provisions for suppressive armament.

The HC-54 has no recovery capability, is over 20 years old, cruises at 140-150 knots, and is not compatible with the tactical forces in terms of speed and altitude. It lacks a controller position with suitable communications to direct recovery operations. No back-up communications equipment is installed.

The HU-16 is limited to VFR daylight water landings in relatively smooth sea conditions. This aircraft has been in the inventory since 1949, and like the HC-54, is slow and limited to low altitude operations. It is important to bear in mind that these aircraft were adapted for the peacetime rescue mission. None were bought or designed for combat aircrew recovery. The low speeds of all the aircraft delay recovery and higher speeds are required to reduce the time interval between ejection and pickup.

In the personal survivor equipment area there are serious deficiencies. For example, the URC-10 and URT-21 beacon have proven to be inadequate in battery life reliability, and range. In addition we have experienced shortages in supply and test equipment. A new type battery, plus test equipment, are being delivered in SEA at the present time but this is only a stop-gap measure, and recommendations will be made later as to positive corrective action. In addition to the improved batteries and test equipment, a pre-amplifier is being installed in rescue aircraft which will increase the reception range.

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The visual signaling devices have proven difficult to identify. The only available pen gun flares and strobe lights look like enemy ground fire from the air and this creates confusion in the recovery zone. Corrective action is being taken to develop a pen flare, with foliage penetration capabilities, and a star burst shell. In addition, a sleeve on the strobe light is being developed with a built-in filter to make directional and flash changes so that it does not look like gunfire. This sleeve has been tested, approved by 2d AD, and deliveries are expected in November 1965. Again, these are only stop-gap measures.

In respect to the avionics/communications area, the lack of adequate navigation aids (NAVAIDS) at the forward sites limits use to day visual flight rules (VFR) conditions. Our headquarters is investigating the possibility of providing a portable navigation beacon at forward sites. At the present time, action is also underway to install a Tactical Air Navigation (TACAN) aid in northern Laos.

Another lesson learned is that the pilot of the rescue fixed-wing aircraft can't control and plot the positions of recovery and tactical aircraft, and fly his own aircraft at the same time. When a recovery mission is in progress, the rescue aircraft commander must coordinate and direct the activities of the recovery aircraft, direct RESCAP and fire suppression tactical aircraft, and maintain a complete current status of all aircraft involved. To effectively manage all facets of the mission, an additional mission controller's position is required in the control aircraft. At the present time, HC-54's are being jerryrigged modified in the theater to provide this extra control position.

In order to reduce the access time to the area north and west of Hanoi, our helicopters have been staging from crude forward operating locations in Laos. Refueling from 55 gallon drums, with hand pumps is incompatible with the current status of air technology, but these are conditions under which our recovery forces have been forced to operate. We are taking action at the present time to provide portable rubberized fuel cells, with

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powered fuel pumps, to facilitate operations from these sites.

These forward bases have contributed, in great part, to several successful recoveries. A like capability on the east coast of North Vietnam would also be desirable. Since there are no friendly forward bases to operate from in proximity to the eastern area of North Vietnam, we are requesting the Navy to provide information on the availability of a surface vessel with a helicopter landing pad. This ship would operate in the Gulf of Tonkin with helicopters aboard, and provide a more rapid response than is presently possible in the coastal areas of North Vietnam. This would only be an interim measure, however, until receipt of the HC-130/HH-3 air-to-air refueling system. . . .

The introduction of six HH-3E's in November 1965 was the first major step to correct aircraft deficiencies. The fact this aircraft was combat-configured, equipped for flight under instrument conditions, and provided increased fuel capacity certainly reflected increased capabilities for ARS forces. The inclusion of doppler radar permitted precision navigation under instrument conditions to a predetermined point. The HH-3E was fitted with crew and critical component armor, communications equipment compatible with all aircraft operating in SEA, and a 240 ft. hoist to penetrate the dense jungle foliage. This aircraft offered a substantial increase in ACR. For example, operating out of Udorn or Da Nang, it could reach any point in NVN and return to home base. If operated from a forward location such as Site 36 in Laos, the additional range capability could be converted to loiter time to provide a more rapid response to an emergency deep in NVN. To

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increase loiter time to an even greater degree and further enhance this capability, an air-to-air refueling system was being developed which would enable the HH-3E to remain on-station for extended periods. The MATS Commander requested acceleration of the development and testing of this air-to-air refueling system because he believed an operational system could be employed in Vietnam by July 1966. The air-to-air refueling system would eliminate the requirement for operations from Laotian sites. He also stated:

With the introduction of the HC-130/HH-3 team in Vietnam, a greatly improved combat recovery system will be realized for the first time. The major limitation will be in the numbers of aircraft available. Not until late 1966, will the long-range recovery helicopter force reach the level of 16. This force was planned prior to the March 1965 strikes in North Vietnam, and was based on the level of tactical activities which existed prior to that time. In order to meet the recovery requirements based on current level of conflict, and approved tactical attrition rates, 11 HC-130s and 32 HH-3 aircraft are required.

The introduction of the HC-130 would provide an improved communications and control capability over the "makeshift system" which was being installed in the HC-54. A built-in manual plotting position with redundant communications would enable the recovery controller to plot the positions, call signs, ordnance and fuel conditions of participating tactical and recovery aircraft. This would result in more effective direction of the recovery effort.

The lack of capability for night recovery would be partially resolved

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upon receipt of the HH-3E's operating in conjunction with the fixed-wing aircraft. The HH-3E, equipped with doppler, could proceed to the pick-up area after the survivor had been visually or electronically located by the fixed-wing aircraft. The helicopter could then be vectored to the pick-up point in a flare-dropped pattern established by the fixed-wing aircraft. The helicopter would then proceed with the rescue as during daylight hours, with suppression fire provided by a RESCAP flight working under flares.⁶¹

At this same briefing, the problem of protection for ARS aircraft was pointed out. The only armament provided to the helicopter crews for suppression fire was the M-16 automatic rifle. Many recoveries had been delayed awaiting fighter support to drive off enemy ground troops. An increased capability in suppression armament for the helicopter crews was required to permit a greater degree of self reliance and protection. Lightweight automatic weapons were available which provided a rate of fire up to 6,000 rounds per minute. Immediate attention should be given to studying the feasibility of equipping recovery helicopters with this type weapon.⁶²

To reduce the vulnerability of the unarmed HH-43B to ground fire, action was taken to provide self-sealing main tanks. As long as the "B" model must be used, the nature of the war in Vietnam demanded this limited protection be provided to rescue crews. Procurement action had been

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initiated and installation would be accomplished in the field.⁶³

Some thought was also being given to organization at this point in time:⁶⁴

. . . . When the Air Rescue Service initially assigned resources to SEA, they were organized under a detachment of the Pacific Air Rescue Center on a TDY basis. As the requirements increased and activities were stepped up, it became apparent that we could not continue to support the TDY requirement. Therefore, we now have a permanent helicopter squadron with 9 detachments.

At the same time helicopter resources were being assigned to the area, we supported the fixed-wing requirement on a temporary basis. This requirement will continue for the foreseeable future, and we have recommended to your headquarters that a fixed-wing squadron be organized on a permanent basis.

At the same time, we reviewed the overall command and control structure, and found that due to the stepped up activities, there is a requirement for a senior rescue-qualified officer with a small staff at Tan Son Nhut. This officer will be the Deputy to the Commander, 2d AD, for all rescue matters. He will command, supervise, and control all recovery forces in the area. The reorganization proposal was submitted last month.

In addition to providing improved recovery mission control, the new organization will provide adequate staff personnel to continually review and update operational tactics and techniques. We have already initiated action, in conjunction with 2d AD, to document combat recovery doctrine and procedures. A brief of pertinent tactics, in brochure form, will be submitted to 2d AD for coordination. This brochure will be provided to rescue and tactical aircrews to insure clear understanding of combat recovery tactics by all concerned.

While it is realized that there are established channels

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for requesting improved and additional equipment, our inability to meet combat recovery requirements in SEA demands that extraordinary measures be taken to correct deficiencies in recovery aircraft and associated equipment.

We recommend that an Air Force level project be established to develop an improved combat aircrew recovery system, as a distinct mission of the Air Rescue Service. Action should be expedited, and this project should be provided with the necessary authority, priority and means.

The MATS Commander also recommended:⁶⁵

1. That the Systems Command be directed to rephase and expedite the development of air-to-air refueling for the HC-130 and HH-3. That a minimum of six HC-130's and eleven HH-3C's in the air refueling configuration be operational in SEA by 1 July 1966.
2. Delivery of 32 HH-3E's required for SEA be accelerated with the last helicopter to be in-place not later than December 1966.
3. Utilizing "Minute Man" technology, direct Air Force Logistics Command (AFLC) to expedite the development and procurement of a new personnel survivor radio with the combined beacon features of the URT-21 and the voice capability of the URC-10. This radio should be rugged and small enough to be carried securely on the crew member when ejection or bailout is required.
4. That direction be given and manpower provided for a joint MATS/TAC test detachment at Eglin for the evaluation of ACR techniques

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and recovery equipment. Each survivor item would be tested under simulated combat conditions for suitability prior to shipment to the field. This would minimize problems such as ARS encountered with the pen gun flares and strobe lights.

5. That a decision be made to provide suppression armament for the HH-3E crews.

6. That the ARS projected requirements study, presented to the HQ USAF staff in June 1965, be used as a basic guide. This would assure a balanced force and a complete system that would be capable of meeting the Rescue and Recovery requirements of ARS.

For the future, the project office should also be charged with establishing the parameters for a rotary-wing or VTOL aircraft. It should be specifically designed and built for the combat recovery mission and fully compatible with the tactical forces.⁶⁶

Finally, combat ACR equipment must keep pace with tactical requirements and be developed concurrently with new tactical systems.⁶⁷

The MATS Commander concluded his presentation with the statement: "The near term requirements are clear and urgent. In the long term, we must very carefully consider and evaluate the proposals for specific systems to meet future combat recovery requirements."⁶⁸

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As a result of this briefing, the Chief of Staff, USAF, directed a letter be submitted outlining the problems encompassed in this briefing with specific recommendations to correct this serious situation. This letter dated 8 November 1965 was signed by the Vice Commander, MATS. It further expounded on the current deficiencies in combat ACR capability and stated these deficiencies were a direct result of failure to recognize this requirement as a distinct combat mission, and failure to develop compatible combat ACR resources concurrently with development of tactical mission capability. That due to the concept that "war contingency tasks should be accomplished as an extension of peacetime efforts using the same resources," ARS efforts were limited to peacetime tasks. The woefully inadequate ACR capability in SEA was concrete evidence of the invalidity of this concept. Rescue aircraft and equipment designed for wartime roles would most always fulfill peacetime mission requirements; however, similar resources, developed solely for peacetime activity, generally fail to satisfy wartime requirements. The introduction of non-combat equipped recovery forces into SEA as an interim measure, and crash modification/procurement programs, which resulted in minimum acceptable capability at excessive cost, illustrated the urgent need for the orderly development of an adequate combat ACR force. An in-being ACR force, fully capable of operation in combat or peacetime environments, would be essential to meet foreseeable requirements.⁶⁹

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The MATS Commander reacted to the reinstatement of the ARS wartime mission in the USAF Wartime Guidance Document (March 1965) with a comprehensive ARS projected requirements study. This study, which set forth the doctrine and force posture essential to meet global requirements, would be used as a guide to create the necessary recovery capability. To achieve the required force posture, the following elements were cited as being essential:⁷⁰

1. The combat ACR mission must be recognized at all levels as a clear and distinct USAF task which required the development and maintenance of an in-being force, specially trained personnel and mission-compatible equipment.
2. Development of the combat ACR capability must be expedited to attain a level consistent with air technology applied to tactical forces.
3. Those policies which in the past resulted in complete degradation of combat ACR capability must be revised to insure this essential capability is kept abreast of the state-of-the-art advances in tactical force capabilities, regardless of peace or war conditions.

Reinstatement of the ARS wartime mission clause provided the "planners" with official justification for establishing requirements for updated equipment. However, it did not have any immediate impact insofar as improving the ARS capability to more effectively accomplish the Search

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and Recovery mission. Development of new or modification of existing equipment, required funds, priorities and a fair amount of lead time, regardless of wartime mission statements. Aircraft, components and personal survival equipment which would provide a healthier operational environment for the SAR forces was still far in the offing.

Throughout the remainder of 1965 and until the end of 1966, ARS, hereinafter referred to in this section as the Aerospace Rescue and Recovery Service (ARRS) experienced considerable growth in Southeast Asia forces. The 3d ARRGp was activated in January 1966 and placed under the command of PARC, now designated Pacific Aerospace Rescue and Recovery Center (PARRC).

Almost concurrently with the activation of the 3d ARRGp, a new PACAF regulation 55-90 directed a change in the operational control of ARRS forces in SEA. This regulation specified that direct operational control of Rescue forces would be from CINCPACAF to the PARRC Commander, to the 3d ARRGp Commander. The 2d AD, which became 7th AF on 1 April 1966, would no longer exercise operational control of Rescue forces. The 3d ARRGp Commander would contribute full Rescue support to the 7th AF Commander but would personally direct Rescue forces at the request of 7th AF. CINCPACAF understood fully that the Commander, MATS, hereinafter referred to as Commander, Military

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Airlift Command (COMMAC), would permit operational control only to CINCPACAF who would exercise this control through the PARRC Commander. This change would have placed the operational control of Rescue forces under the command of personnel totally familiar with SAR procedures and capabilities, but would have posed problems with respect to providing support for rescue missions, i. e. , RESCAP/RESCORT aircraft, etc.⁷¹

The problem involving operational control of ARRS forces in SEA had its beginning as early as July 1965. The earliest records available indicate that sometime prior to 1 August 1965 the operational control of all Rescue forces was vested in the Det 3 Commander. For some unknown reason, in July and August 1965 the Deputy Commander, 2d AD/13th AF, convinced the operations staff that operational control of SAR forces in DRV (now NVN), Thailand and Laos should be vested in him. This was confirmed by 2d AD message on 24 August 1965. Only the pre-positioning of the out-country SAR forces was retained by 2d AD and Det 3, PARRC.⁷²

In early November 1965, the situation became more complicated as a result of a mission that was not too effective because of command and control problems. As a result of this mission, the senior Rescue officer in SEA sent a message recommending ARRS regain operational control of all Rescue forces in-theater. Numerous repercussions to this message caused the PARRC Commander to direct that it be immediately rescinded.

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Therefore, the situation remained the same as it had been in August.⁷³

From the November incident on, ARRS continually and persistently attempted to gain the confidence of 2d AD and prove that the control rightfully belonged to Rescue acting in the name of the 2d AD Commander. The publication of 2d Air Division Regulation 55-20 dated 4 March 1966 formalized the previous 2d AD directions and retained the out-of-country control at the Deputy Commander, 2d AD/13th AF level.⁷⁴

On 23 March 1966, the 2d AD Deputy for Operations convened a conference to clarify the Command and Control procedures for SAR in SEA. This conference was prompted because of some misunderstanding between the Tactical Air Control Center (TACC) airborne command post and the Rescue Crown aircraft during a SAR mission over hostile territory. Everyone at the conference agreed that operational control logically belonged at a central location and under one commander. The Vice Commander, 2d AD, agreed and directed that operational control be returned to the 3d ARRGp and exercised through the JSARC. The necessary amendments to directives were drafted and the change would have been implemented shortly, had it not been for the receipt of a proposed copy of PACAF Regulation 55-90 referenced above.⁷⁵

At the time the Vice Commander, 2d AD/7th AF directed the return

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of control to the 3d ARRGp, he also stated: "Crown aircraft (HC-54/130) would be the Airborne Mission Commander. This is the man I look to to actually run the Rescue mission." The Rescue Airborne Mission Commander was to command the local situation in the same manner as the controllers aboard the TACC airborne Combat Control Center aircraft (C-130).⁷⁶

The following statement by the 3d Group Commander points out the confusion that generated as a result of PACAF Regulation 55-90:⁷⁷

All of this was working fine and we felt we had really made money until about two weeks later when we received a printers proof copy of PACAF Reg 55-90 which PARRC had been working on. This gave us operational control okay but pulled it out from 7th AF, which I don't agree with because I think the theater commander in a wartime situation should have ops control of all forces committed to the effort. Everything else assigned here for support is under 7 AF under MACV. Anyway the 7 AF staff is just waiting for the formal reg to be published and then vent their wrath into action. I'm not very happy with the reg either and the PARRC Commander said to let him know what I wanted, but I saw by his reactions that he is going to be pretty adamant on his position. Other items I don't like about the new reg are caused by the almost ignoring of the 3 ARRG position in placing all JSARCs in the Pacific under the supervision of PARRC. PARRC provides for JSARC manning rather than 3 Gp. Para 3f of 55-90 is very unique in that the 3 Gp JSARC is only responsible to PARRC and exercises operational control for Commander PARRC, ignoring the position of Commander 3 Gp. . . . I personally like the way 2 AD 55-20 read after the revision discussed above. Needless to say, I and 7 AF are not very happy about the situation. . . .

Although the regulation was approved, operational control of ARRS

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forces remained with the Commander, 7th AF. Considerable correspondence generated on the pro's and con's of this policy which was not resolved until August 1966. A message from the 3d ARRGp to the PARRC Commander dated 25 August 1966 clarified this situation:⁷⁸

This message in two parts. Part I. Reference PACAF Reg 55-90. This publication specifies operational control of ARRS forces in the Pacific area is exercised by PACAF through PARRC. However, USMACV exercises ops control of all U. S. forces and military agencies assigned. Cmdr 7AF is AF component Cmdr for MACV with authority to exercise control of all USAF units assigned or attached. ARRS Programming Plans recognize this command line in SEA. USMACV is a subordinate unified Cmdr under the ops control of CINCPAC and CINCPAC charges him with the ops control of all U. S. forces. USMACV exercises ops control of USAF forces through his air component Cmdr (7AF). ARRS forces supporting 7AF operations are therefore under the ops control of 7AF. PACAF Reg 55-90 should be changed to (1) reflect the ops control structure as directed by CINCPAC and COMUSMACV (2) recognize that Cmdr 7AF is sole SAR coordinator for SEA allowing him authority to delegate this function as determined locally (3) ops control of ARRS forces is exercised through the air element of the Joint Search and Rescue Center or the Sub-Rescue Coordination Center, i.e., 3ARRGp. Part II. Understand separate message from Cmdr, 7AF to Cmdr, PACAF will reaffirm this position. Suggest change be effected expeditiously to avoid further confusion this matter.

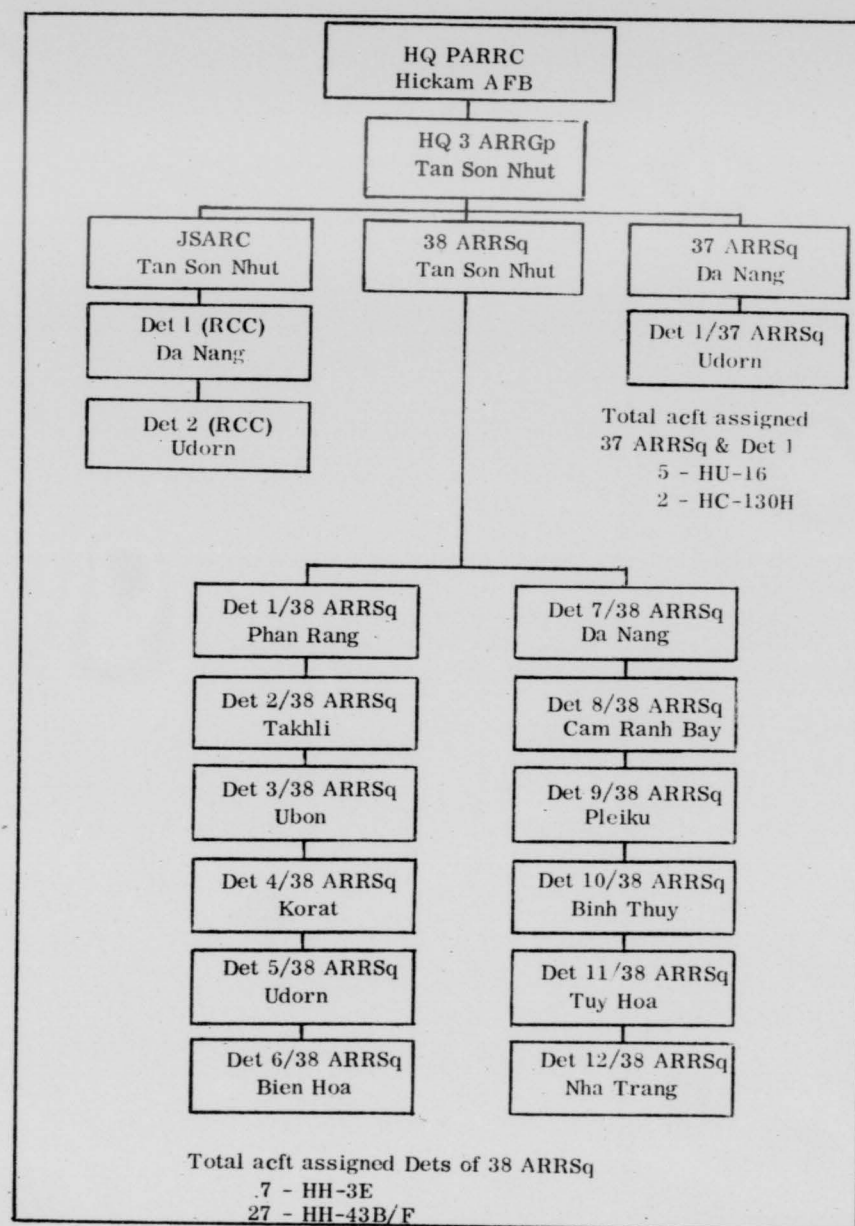
The command and control problem was further complicated by the division of responsibility between 13th AF and 2d AD. All bases in Thailand were under the control of 13th AF. Second Air Division had been moved from under 13th AF and placed under direct control of PACAF. There were

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a lot of hard feelings between the two headquarters. Most of the operational control had been delegated to 13th AF; however, all frags for both countries came out of 2d AD. Each headquarters was responsible for logistics within their own area of responsibility. Operational planning for both headquarters was accomplished by 2d AD. This confused arrangement certainly had its impact with regard to the operational control of SAR forces.⁷⁹

Simultaneously with the activation of 3d ARRGp, two Sub-Rescue Control Centers (RCC) were established at Da Nang and Udorn. This provided closer control of SAR missions in the Gulf of Tonkin and North Vietnam. The 37th ARRSq was activated at Da Nang with a detachment at Udorn to provide the total fixed-wing SAR capability. Detachments under the already existing 38th ARRSq were increased to 12, making a total of one group, two squadrons and 15 detachments located in the RVN and Thailand (Ref Tab N). The total aircraft and helicopter strength had increased to 41 by end 1966.

With the buildup of ARRS forces in SEA, a more orderly approach to "getting the job done" was in evidence. Plans were developed to establish administrative operating procedures for the 3d ARRGp. Group directives were prepared and publication requirements identified. Actions initiated by DCS Materiel/2d AD in September 1965 resulted in vast improvement in supply support. Although transportation of "things" continued



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to pose a problem, increased use of courier flights to deliver Non-operational Ready, Supply (NORS) parts reduced the NORS rate on an average of two days per aircraft.⁸⁰

A program initiated in September 1965, to increase the amount of available supplies in stock, began to show results. Realistic stock levels available in-theater doubled the number of items available for issue. Problems in long delivery times were still evident for selected items which were in short supply everywhere. Effort initiated in November 1965 to have each detachment supported by their host base supply, resulted in positive actions by all but two bases. This reduced "bottleneck" problems that were previously encountered when all property was shipped to the base supply account at Tan Son Nhut. Transportation difficulties caused by transshipment of this property diminished as stock levels in the various base supply accounts built up.⁸¹

Air-to-air refueling of helicopters from HC-130's was in the mill during the 1965-66 time frame; however, progress to provide the "in-being" capability was slow, due to the administrative procedures required to give industry the "go-ahead" for the modification. The helicopter/HC-130 air refueling system was initially programmed for an October-November 1966 SEA delivery; however, it did not become operational "in-country" until July 1967. Research and Development effort was underway to provide a

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night/all-weather recovery system which was sorely needed to improve the search and recovery capability.⁸²

Disagreement existed between DCS Plans/Hq ARRS and the 3d ARRGp with respect to type aircraft that should be assigned to the two squadrons in SEA. The planners felt that the fixed-wing squadron should be a mix of fixed-wing aircraft and helicopters. DCS Plans reasoning was vested in the most fundamental of management principles, i.e., functional or homogeneous assignment. Both the fixed-wing and helicopter personnel had one major objective -- that of recovering downed combat aircrewmembers. In the planners' view, the squadron commander charged with this responsibility should have unquestioned authority over the recovery forces, not only in the prosecution phase, but also in the preparation phase which included readiness, briefings, morale, safety, and all other factors that make up a military organization. The composite squadron would be the physical realization of the "team concept" which the planners thought would be an ARRS "way of life" in the future.⁸³

The 38th ARRS/3d ARRGp Commander believed that such a realignment would necessitate additional helicopter manpower spaces in the fixed-wing squadrons and would result in a duplication of resources already available in the other SEA squadron, which was totally helicopter-equipped. He believed that the effectiveness of helicopter

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operations and conservation of manpower could best be realized by assigning all helicopter detachments under one squadron. This was based on the fact that this squadron was already staffed with highly qualified helicopter personnel and possessed a greater capability to command and administer to all ARRS helicopter units in the theater. He pointed out that the opportunity for career progression of helicopter pilots was an important factor to be considered. During the 1966 time frame there was a limited number of slots in the Air Force for helicopter pilots above the grade of Major. As a result they had to change career fields in order to progress. If ARRS was to retain this valuable resource and benefit by the knowledge and experience they possessed, some provision had to be made for growth potential. This could best be accomplished by insuring that command and supervisory positions of rotary-wing units were filled by helicopter qualified personnel. This type of planning effort was constructive and insured consideration of the "field commander's" desires; however, the salient point was that planning for realignment of forces should normally be consummated prior to the assignment of these forces to a theater of operation.⁸⁴

Although the conflict in Vietnam was increasing in tempo, some thought was given to the organization of ARRS post-SEA. The 3d ARRGp Commander stated:⁸⁵

I feel we should be like a task force that goes wherever the action is and has a capability of rapid expansion to suit

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that action. When no action is in progress (seems a remote chance from here) this unit should train and participate in tactical exercises, etc., as part of the exercise. It should constantly be trying to further the state-of-the-art, developing and testing new life support equipment under operational environment, etc. It should have at least a nucleus which is prepared to deploy any place in the world and work under the operational control of the theater commander involved. It should be an entirely independent specialized command with a command line direct to ARRS, as I feel it should be at the present time. As far as I'm concerned we would be in deep trouble at the present time, if it were not for the fact we are functioning in this manner. . . .

Concurrently, Air Force was taking a close look at the future welfare of ARRS in the combat environment. A message from the Chief of Staff, Air Force, Subject: Wartime Search and Rescue (SAR) Procedures, stated as follows:

Current SAR operations in SEA are at variance as a matter of necessity or experience with guidance contained in the above tri-Service directive. The opening policy statement is "Wartime SAR procedures are essentially an extension of the peacetime procedures described in the National Search and Rescue Manual." This statement is contrary to actual experience gained in SE Asia. In actuality, wartime SAR has very little in common with peacetime procedures. The policy statement, as published has led to the fallacious belief that SAR forces equipped for peacetime operations can survive in a combat environment. Experience in SE Asia has proved otherwise and it has been necessary to arm and provide armor for SAR aircraft on a priority basis. Additionally, operating forces have found it necessary to publish a detailed manual spelling out coordination procedures and wartime SAR methodology. Several helo sections of the tri-Service directive are also in conflict with existing procedures, i. e., call sign information and authentication

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procedures.

As a result of the CINCPAC recommendation, the Joint Staff has tasked the Air Force to accomplish a review of AFR 55-7, Wartime Search and Rescue (SAR) Procedures, in conjunction with the Army and the Navy.

The objectives of this review according to the CSAF message referenced above were to correct the fallacious beliefs that:⁸⁷

1. Wartime SAR procedures were essentially an extension of the peacetime procedures described in the National Search and Rescue Manual.
2. SAR forces equipped for peacetime operations could survive in a combat environment.

An additional objective was to identify those sections of AFR 55-7 that were at variance with current SAR operations in SEA.

This review was accomplished and resulted in a new tri-service regulation that superseded AFR 55-7. It was published 31 May 1967 and identified as AFR 64-3; Army Regulation 525-90 and Navy NWP SUPP 37 (A).⁸⁸
The new regulation stated as policy:

The objective of SAR as described in the National Search and Rescue Manual, that is, to aid and recover personnel in distress, is the same in wartime as in peacetime. However, to operate in hostile areas, the peacetime SAR forces must be equipped and trained for the wartime mission.

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This revised policy statement and subsequent sections of the new regulation accomplished little toward correcting the fallacious belief that "Wartime procedures were essentially an extension of the peacetime procedures." Paragraphs 5 and 6 of the regulation stated:⁸⁹

Wartime SAR in friendly territory is basically an extension of peacetime SAR operations. Techniques and procedures contained in the National Search and Rescue Manual for peacetime use provide a swift reliable means of aiding rescue in wartime.

Procedures and techniques discussed in paragraph 5 for use in friendly territory also apply to hostile territory. In addition, the area commander will develop specific procedures, tactics and equipment in keeping with the tactical forces, enemy situations, climatic and geographical factors involved.

Air Force Regulation 64-3 would no doubt cause considerable trouble in the acquisition of SAR equipment for the wartime mission, as did the policy statement contained in AFR 55-7, which was largely responsible for the lack of adequate SAR equipment when ARRS operations began in Southeast Asia. Search and Recovery was identified as a valid wartime mission, recognized by all echelons of command. It should not be assumed that this mission could be effectively accomplished with residue equipment, any more so than the tactical mission.

E. ACR Problems

While effort was underway to correct the deficiencies of inadequate regulations and confused command and control policies, high level interest

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swung to the problems of personnel recovery from hostile areas. In late 1965, the 3d ARRGp received two HC-130H's and five HH-3E's, which increased to four HC-130's and 16 HH-3E's by late 1966. The HC-130 provided an increased airborne command and control capability while the HH-3E's improved the SAR potential by virtue of extended range and increased survivability. Although the capability to more effectively prosecute SAR missions was on the "up swing" this increased potential was somewhat negated by the growing demands for SAR missions that exceeded the capabilities of these newly assigned aircraft.

In March 1966 a well known U. S. magazine printed a short article stating that Tactical Air Command was urging development of a greater rescue capability for pilots downed deep inside North Vietnam. A message from Hq ARRS to 3d ARRGp dated 22 March 1966 indicated information had been received that the HH-3E could not meet recovery requirements in terms of hover capability at altitude and range. Hq ARRS was not officially approached on this problem, but received informal information that a study would be made on recovery capabilities.⁹⁰

In late 1966 the Office of the Department of Defense Research and Development requested the Advanced Research Projects Agency (ARPA) to examine the problems of personnel recovery from hostile areas. A representative from ARPA was sent to Southeast Asia and conducted an

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extensive survey on Rescue operations in hostile areas. His report stated:⁹¹

The problem of recovering personnel, primarily downed aviators, from hostile areas remains critical. Although recovery "rates" for the present operation in SEA are better than for either the Korean conflict or World War II, these recovery rates could be noticeably enhanced by the application of improved technology. (Methods of recovery rate determination vary so widely that any figures given by anybody should be seriously questioned as to assumption, data base, and unfortunately, accuracy.) If the defensive environment continues its development, entirely new tactics and systems will be required within the next 6 to 12 months if we are to maintain even our present recovery rate. Certain logistical, supply and command problems exist in SEA which also severely limit our capability to recover people from hostile areas.

Each of the deficient areas examined by the representative from ARPA were discussed briefly. Inaccessible areas was cited as by far the most serious long-range technical and operational problem in search and rescue operations in SEA. This problem was divided into two subject areas:⁹²

1. Range Limitations: There are areas which are out of range of present helicopters due to fuel and density altitude limitations. It was not simply a question of straight line range, but rather of the defense avoidance routes required, as well as the mid-point hover requirement. The upcoming USAF HC-130H/HH-3/HH-53 system would do a lot to alleviate this problem and is vitally important to an improved SAR capability.

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It appeared to this representative that the use of presently available USAF and Navy helicopters refueling from surface vessels would give total coverage in all areas presently considered out of range. This presumed, however, that the defensive environment in the pickup area was not too hostile for helicopter survivability and that penetration routes were available. To a degree it seemed a matter of opinion whether any helicopter should be sent into Route Package VIB. The Air Force didn't believe the Navy would send its helicopters into Route Package VIB or VIA, yet the Navy was never asked to relocate a destroyer with a helicopter aboard to a more northern position. The Air Force was able to cover only a very small part of Route Package VIA when it launched helicopters from Thailand. The helicopters had to cross the Red River almost at the China border and then could only proceed about 50 miles down river for recovery operations. From a refueling standpoint, there was little that a destroyer could not do in the Gulf of Tonkin that a HC-130H/HH-3/HH-53 combination could do except rapidly relocate (an important exception, particularly if something unforeseen happens). The Advanced Research Projects Agency representative added that to the best of his knowledge, the Air Force had never tried to determine the feasibilities of marrying their helicopters to the Navy's destroyers for refueling. ARRS indicated this was tried in 1965. On the Western side of North Vietnam the HC-130H/HH-53 combination appeared to be the only answer to the refueling problem. However, on the Gulf side of North Vietnam

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there appeared to be some untried combinations that could materially improve the total capability. The ARPA representative related he was aware of the fact that the Air Force helicopters presently in use were not single-point refuelable and also normally used JP4 fuel. He further stated that these helicopters were going to be modified (at considerable expense) for air-to-air refueling and hopefully, that they would also be modified at the same time for ship-to-air refueling. (This capability was subsequently provided under Project "High Drink.")

2. Defense Limitations: Here, the representative reported, was the real crucial question and the one to which the Research and Development (R&D) community should address itself. There were already areas in SEA which were closed to helicopter rescue operations as well as A-1 aircraft search operations, due to enemy defenses. In early 1966, the closed areas were confined to parts of Route Packages IVA and IVB. In November 1966, parts of every Route Package were so heavily defended that rescue operations could not be undertaken in or through these areas. Intelligence personnel interviewed believed that the enemy could effectively bar helicopters, using present tactics for penetration and pickups, from all of NVN within the next year. An admittedly cursory examination of the trend (i.e., number of rescues not attempted or broken off due to hostile actions, as a function of time) showed that the limitations were becoming quite serious and that one could expect the recovery "rate" to begin falling off. Up to this point there

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had been steady improvement as a result of more and better equipped rescue helicopters. Considerable confusion existed as to the nature and degree of the Surface-to-Air Missile (SAM) threat to A-1's and helicopters. Some personnel felt that neither the A-1's nor the helicopters could survive at all in a SAM envelope. The report emphasized the importance of obtaining accurate information with respect to the SAM threat and providing this information to the user. There was no doubt as to the vulnerability of the A-1's and the helicopters to ground fire. It was important, however, that systems be developed which would permit pickup in areas already defensively closed to helicopters as well as those areas which may become closed to helicopter operations.

The report outlined that everyone concerned with the recovery problem was limited by the lack of a data bank. The Navy had the ONI 53-1 Report which summarized an operations report on each loss by the Carrier Task Force (CTF); however, the amount of detailed information was limited. USAF and USMC had no such compilation. ARRS kept records only on successful recovery operations. The Joint Personnel Recovery Center (JPRC) was spending a lot of its time on data accumulation that somebody else should have already accomplished. It was pointed out that the older this data becomes the harder it is to produce complete information on each incident and that the lack of data precluded any good operations analysis. In addition to the Navy

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ONI 53-1 Report, PACAF had a single hand-written compilation of limited data on USAF losses, JPRC had scattered information on unrecovered losses. One of the most complete USAF records was the Missing Persons Supplementary Report which was strictly a personnel document. The 7AF Weekly Air Intelligence Summary had some limited data as did the PACAF Summary of Air Operations - SEA. However, no one group or agency had the responsibility for compiling this data.⁹³

It was pointed out that there was a poorly coordinated USAF/USN SAR operation. CINCPAC had directed the formation of a SEA Search and Rescue Center (SEASARC), in lieu of the so called "Joint SARC" (JSARC) operated solely by the Air Force. The Advanced Research Projects Agency representative felt that if this was ever implemented it would do a lot to improve the recovery capability. The Air Force and Navy were running almost duplicate and independent operations without having established direct lines of communications to tie the two together. There was little, if any, exchange of ideas, information, or procedures between the USAF and Navy SAR forces. For example, there had been no in-theater coordination between USAF and Navy on the operational concept of the new air refuelable HH-3 and HH-53 helicopters. Carrier Task Force 77 hadn't even heard of the Air Force's plan to use the air refuelable helicopters. There was tremendous duplication and lack of coordination except during the actual

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conduct of a SAR effort -- and then it was unfortunately too late to work out procedures, plans, and command and control responsibilities. The author of this report was personally convinced that more than one pilot had been lost due to this problem. And, although he realized that roles and missions were sticky problems, they were not worth losing people over.⁹⁴

The report cited numerous deficiencies covering many facets of the total search and recovery operations. These were listed as follows:⁹⁵

1. No Night Rescue Operations: With the exception of certain over-water pick-ups by helicopters, there were no night rescue operations in SEA due to equipment and crew training limitations. Even a limited night capability would expand the current operations. Night helicopter operations would be inherently less vulnerable to defensive fire (non-radar controlled) and would appreciably improve the recovery rate. Flares and strobes would make night location problems relatively easy once the general area was established and would also permit search planes to discriminate a colored strobe from ground fire.

2. White Parachutes: All Navy emergency parachutes as well as most USAF parachutes used in F-4 aircraft were all white. Since hundreds of thousands of white flare parachutes have been dropped in strike areas, it was impossible to discriminate the white emergency parachutes. It was recommended that immediate action be taken to dye all white personnel

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chutes some bright color, to assist in discrimination and to enhance their observability. This problem was briefed to CINCPAC who indicated that they might try to take action.

3. Pilot Location Marker - Visual Ground Emplaced: A requirement was identified for a device which would enable pilots to mark their position beneath the heavy jungle canopy. A device that was small, lightweight, and simple, which would put a relatively long-lasting marker on the top of the jungle canopy. There was no stated requirement presently in the service channels.

4. Pilot Location Marker (Visual)(Air Emplaced): A collateral requirement was identified for a device which would permit Rescue Combat Air Patrol (RESCAP) aircraft to mark the location of downed airmen once their position had been determined. Such markings would permit better fire suppression, quicker pick-up by helicopter, and also enable planes to return to the same location at a later time. (At least one loss occurred due to inability to relocate precise pilot location.) It was pointed out that this requirement should be easily solvable; however, no requirement was in service channels at this time for this particular use and type of marker.

5. Communication: Communications was cited as the single most serious technical problem in current search and rescue operations. Present equipment (AF-RT-10/RT-10A, Navy-PRC-49, URC-10, RT-10)

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may be adequate, however, lack of spare batteries posed a problem (none in the theater for AF-RT-10's or Navy-URC-10's or RT-10's). CINCPAC was briefed on this problem and indicated that they would take action. There was also a lack of proper test equipment. The AF had some which worked poorly and only on certain radios. The Navy had no test equipment and lacked proper maintenance equipment. As a result of this situation, pilots were reluctant to test their radios for fear of running down the only battery they possessed. To counteract this, pilots pooled their radios and carried more than one on their missions. It was cited where one pilot went down with five radios, of which only one worked. The radios had no volume control on the speakers and hence tended to compromise the user's location. A field modification was made on the URC-10 within three hours after the ARPA representative presented the problem. Arrangements were made to modify in-theater an additional 120 of these radios. These 120 would also be switched to assorted frequencies for special rescue operation and again this would be a field modification accomplished by the ARPA unit.

6. New Radios Presently in Production: The survival radio problem was not resolved during this period (1966) as evidenced by new radios that were in production. The PRC-63 (Navy single channel) and URC-64 (USAF four channel) were both in production. The design of the PRC-63 did not include ear plug option or volume control. The URC-64

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included only the volume control feature and it was not known whether the batteries were interchangeable. This was an opportunity to insure some standardization as to type(s) of survival radios carried by all personnel in SEA to simplify supply and maintenance problems as well as operational problems if some radios were going to be multi-channel and some not.

7. Case in Point - Non-Interchangeable Batteries and Non-Use of Auto-Beepers: The author of this report cited the case of a pilot on the ground in North Vietnam who certainly would have been a strong advocate for interchangeable batteries and the use of auto-beepers had he been recovered. This pilot was observed to be experiencing battery failure, so elaborate arrangements were made to drop spare batteries in his generally known area. As it turned out later, the pilot had the URC-10 radio, but batteries for the PRC-49 were dropped. "Pilot was never recovered -- one wonders what his reaction was to finding the wrong batteries; probably wondered whose side the SAR forces were on." In this case, the pilot was known to be alive and his general location had been established, yet he was lost or presumed captured after two days of intermittent radio contact. Another interesting fact was, the wingman stated emphatically at the time of loss that "he never got out. . . saw him go right in with the aircraft." This pilot came up on his radio a few hours later and was positively identified.

8. Use of Automatic Beepers: There was no theater policy on

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the use of automatic beepers. In fact, 7th AF for a short time prohibited their use; their reasoning -- to preclude compromising location and to reduce the false alarm rate. "Fortunately, the policy was rescinded; however, among AF pilots there is still not a standard practice, regardless of what 7th AF might say to the contrary. The Navy leaves this up to individual squadrons." Both the Navy and Air Force operated an almost continuous direction finding (DF) watch for automatic beepers and could determine if an incident had taken place, and establish the general location of the incident. The beeper could be activated as low as 1,000 feet above the ground in NVN and normally, still permit DF'ing by all stations. The mean height, for pilots ejecting, was about 3,500 feet. There was no automatic beeper compatible with the F-4's, although the URT-27 was developed for this purpose, there were none available in-theater. One Navy F-4 squadron was using jerry-rigged PRC-49's. CINCPAC was briefed on this problem and indicated they would probably try to take action.

9. Army's Lack of Survival Gear and Training: The report stated that until very recently the Army had no survival gear or radios available for issue to their aircrews. Any survival gear that Army crews had was obtained individually from other sources. After concerted efforts by various organization in the theater -- notably the Joint Personnel Recovery Center -- the Army was attempting to redress this problem and,

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as a result, was going to purchase all sorts of survival gear. Here again, was an opportunity to standardize survival equipment. CINCPAC was briefed on this problem and was unaware of the lack of equipment, but indicated they would inquire of the U. S. Army, Pacific as to the status of the problem.

10. Better Close-In DF Capability: The DF equipment on rescue aircraft was not too good for pinpointing precise location of beeper signals. The problem existed not only with USAF Rescue helicopters, but with A-1 aircraft used for Rescue Combat Air Patrol and Rescue Escort. The problem was one of antenna location. Some field testing was being accomplished with respect to antenna placement on the A-1 aircraft and a proposal had been submitted to the Air Force for a precise DF'ing capability for helicopters using blade mounted antennas. A decision was needed as to whether or not this improved capability was desired.

11. Authentication: A variety of procedures were being used to positively identify downed aircrew men with whom radio contact had been made. Generally, the best procedures utilized personal information regarding the downed airmen on the ground. The problem assumed a rather serious note when beeper signals were received, but no rescue operation was undertaken due to the possibility of enemy decoy beepers. Commanders did not commit rescue forces to a moderately or heavily defended area, simply on

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the strength of a beeper, unless the location and timing of the beeper could be related to a very recent loss. Some research and development effort was required to determine whether or not a coding device could be incorporated in the future survival radio design that would simplify and improve the authentication procedure.

12. Strobe Light: A variety of strobe lights were available in the theater; however, one type seemed to be rather universally preferred and also universally hard to get. This was the AF strobe that had a colored shield to give it directional masking as well as permit observers to discriminate the strobe from ground fire. Many Navy personnel who possessed only the white strobe stated emphatically that they would not use it if downed over land. There had been at least one case where a downed pilot using such a strobe was strafed by the rest of his flight who judged the strobe to be flashes from ground fire. Items such as this should be evaluated and the best version standardized, both for future procurement and for immediate use in SEA.

13. Flares: The only visual signaling device carried by pilots which could penetrate a heavy jungle canopy was trace ammunition. The use of such ammunition for signaling purposes required close coordination with searchers to preclude getting shot back at. A requirement existed for more optimum equipment, i. e., improved pen gun flares, gyro-flares, etc.

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These items were known to exist, but were slow in working their way into the theater. Again, a decision needed to be made on the best item, then expedite it to the theater for universal use.

Comments from this report also touched on the subject of overmanning in aircraft, and flying missions in a hostile environment with reduced bomb loads. The use of two pilots or a pilot and a radar observer, for missions which did not require the second man, correspondingly increased the exposure rate of aircrew members. Many USAF and Navy aircrew members felt that the second man was unnecessary for some, but not all missions. No one seemed to know who had the prerogative of taking the second man out. However, the impression on the Air Force side was that it was an Air Staff decision. A strong feeling existed amongst pilots and commanders, with respect to overmanning in aircraft. It appeared that someone, somewhere, could have made a decision on this problem and ensured that it was disseminated to the next lower level. Similarly, the bomb shortage which existed, combined with the USAF/Navy desire to fly the maximum number of sorties as compared to the other service, resulted in some aircraft flying at less than optimum load. This likewise increased aircrew exposure to the hostile environment. Here again, it appeared that some control could have been established to reduce the unnecessary sorties, either by ending the sorties race, "or by simply laying down a rule on less

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than optimum load sorties."⁹⁶

The report summarized that positive actions must be taken if these problems were to be solved and that someone should be designated as the action agency. Each of these problems in themselves made a significant difference; collectively, they made a tremendous difference between current capability and potential capability.

The report recommended the following action items:⁹⁷

1. Formation of an intensive study team to determine exact defensive threat and requirement for specialized recovery systems.
2. Review of air-to-air and ship-to-air refueling operations with the view of quickly improving the existing capability.
3. Dying of all white personnel parachutes used in Southeast Asia.
4. Coordination of PRC-63 and URC-64 radio production and utilization.
5. Determination of status of test gear, spares (especially batteries), and maintenance equipment for existing and future radios; emphasis should be placed on compatibility and interchangeability of batteries, testers, etc., for future radios.
6. Development of location markers -- air emplaced and ground emplaced.

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7. Recommendation to USAF and Navy to consider closer coordination of their SEA SAR activities. Immediate formation and activation of the CINCPAC directed SEA Search and Rescue Center.

8. Standard policy on use of automatic beepers.

9. Determination of the status and availability of the URT-27 beepers which are compatible with the F-4 ejection system.

10. Review of the Army's program for supplying survival equipment to its Southeast Asia aircrews to ensure positive action and also coordination with USAF and Navy development and production activities in this area.

11. Modification of all SAR airframes to optimum DF antenna configuration; consideration of rotor blade antenna setup for helicopters.

12. Determination of optimum design characteristics for a follow-on rescue radio for use by all services. Such a radio to include a system for positive personal authentication.

13. Standardization of strobe lights issued in Southeast Asia.

14. Development of improved ground/air signaling devices which would operate from beneath dense jungle canopies.

15. Standardize the entire survival "package" carried by aircrews in SEA to an optimum configuration. All essential items should be carried on the individual; supplementary items only should be considered for inclusion

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in the seat pack.

16. Decision regarding "overmanning" of aircraft.

17. Decision regarding the reduction of unnecessary sorties generated by less than optimum bomb loads.

F. Combat Aircrew Recovery Analysis

As the requirement increased for an aircrew recovery vehicle capable of improved response in terms of speed, range, additional armor or armament, new concepts for retrieving downed airmen, etc., detailed justification for the improved performance characteristics of an advanced design vehicle was required.

One of the most important criteria required to satisfy review authorities on the necessity for this proposed new vehicle was an assessment of SEA experiences which would illustrate how improved performance could have resulted in "more" saves of downed airmen than had been accomplished with existing equipment. To achieve this, HQ USAF requested Hq MAC to undertake an operational analysis of the records of aircrew recoveries in Southeast Asia. To the extent possible, all incidents of downed USAF and VNAF fliers were to be analyzed to determine the most probable factors that precluded their return. This operational analysis was also to include a review of incidents where "saves" were accomplished to determine if they

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could have been accomplished more effectively with aircraft having improved performance characteristics.⁹⁸

The objectives of the analysis were:⁹⁹

1. Determine the factors that precluded the return of downed fliers.
2. Determine if successful saves could have been accomplished more effectively with aircraft having improved performance characteristics. MAC Operations Analysis established as a secondary objective the defining of the elements of the reporting system for combat aircrew recovery activities that would yield more meaningful information than the current system.

The original intent of the analysis was to examine the cases of all USAF and VNAF aircraft downed between the period 1 January 1966 and 31 March 1967. The lack of primary data on USAF aircraft for the period 1 January through 30 June 1966, caused the analysis to be confined to the nine-month period, July 1966 to March 1967. The data on VNAF incidents was so scarce that it was not included in the analysis. In the process of collecting the USAF data from PACAF files it became convenient to obtain data on Navy incidents for the July 1966 to March 1967 time period. Data was obtained from the following sources:¹⁰⁰

1. Operational reports on file at PACAF Headquarters.
2. Search and rescue reports on file at the 3d ARRGp.

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3. PACAF Directorate of Intelligence Escape and Evasion Reports.

4. PACAF DCS/Personnel Missing-in-Action folders.
5. 7th AF Defense Analysis Monthly Evaluation Summary.
6. CINCPACFLT Incident folders.
7. Navy Safety Center reports.
8. CINCPACFLT Missing-in-Action folders.

For the period 1 July 1966 to 31 March 1967, 278 incidents of downed Air Force aircraft and 114 incidents of downed Navy aircraft were examined. The incidents were categorized as follows:¹⁰¹

1. Country in which the incident occurred (the country in which the plane was hit was not necessarily the country in which the crewman went down. Incidents were identified by the country where the initial hit or damage occurred).

2. Combat or operational.
3. Fate of the crew member.

Four categories were used to describe the fate of the crew member:

1. Rescued.
2. Killed in the incident. (This category contained those officially listed as killed and was used to show those who could not have possibly been rescued.)

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3. Contacted, but not saved. (This category included those personnel who were observed either by visual or electronic means who had exited from the aircraft and had a reasonable probability of reaching the ground alive.)

4. Unknown. (This category included those personnel whose status could not be determined from available data.)

Recovery Rate was defined as the percentage derived by dividing Rescued by the remainder of Personnel Involved minus Killed. The recovery rates for Air Force incidents that occurred in Thailand and South Vietnam were 86% or above. The recovery rate for Air Force incidents in Laos was 76%, whereas the Navy had only two incidents in that country with a 50% recovery rate. The recovery rate for North Vietnam was 35% for the Air Force and 53% for the Navy which indicated that the major area for improvement was in North Vietnam (Ref Tab O). The recovery rate had been decreasing during the nine-month period covered, dropping from 40% to approximately 20%.¹⁰²

A number of factors probably contributed to the decreased rate: i.e., improved defense systems, broader defense systems, changes in offensive strategy and/or tactics, and changes in areas of offense concentration. Of the 198 personnel who went down in North Vietnam, 171 went down in the

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AIR FORCE INCIDENTS

COMBAT

	<u>South Vietnam</u>	<u>Laos</u>	<u>Thailand</u>	<u>North VN</u>
Incidents	69	40	8	137
Personnel Involved	109	64	11	198
Rescued	45	34	8	65
Killed	57	19	3	10
Contacted	0	2	0	65
Unknown	7	9	0	58
Recovery Rate	86%	76%	100%	35%

OPERATIONAL

Incidents	14	1	9	0
Personnel Involved	18	1	14	-
Rescued	11	1	8	-
Killed	7	0	4	-
Contacted	0	0	0	-
Unknown	0	0	2	-
Recovery Rate	100%	100%	80%	-

NAVY INCIDENTS

COMBAT

	<u>North Vietnam</u>	<u>Laos</u>	<u>Operational</u>
Incidents	98	2	14
Personnel Involved	131	4	49
Rescued	58	2	29
Killed	21	0	20
Contacted	20	1	0
Unknown	32	1	0
Recovery Rate	53%	50%	100%

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following three Route Packages (RP) with the recovery rate for each RP as shown below:

	<u>PERSONNEL DOWN</u>	<u>RECOVERY RATE</u>
Route Package I	54	52%
Route Package V	24	28%
Route Package VI	93	18%
	<u>171</u>	

The recovery analysis indicated that the overall recovery rate for North Vietnam must be sensitive to the level of activity in these three RP's, particularly V and VI. However, to fully understand the cause of the decreasing recovery rate, a detailed analysis of exact target location, offensive tactics, and number and location of defenses would be required.¹⁰³

The personnel in the "contacted" and "unknown" categories were further classified according to the most probable cause of failure to recover:¹⁰⁴

1. SAR was launched, but rescue vehicles were driven off by hostile ground fire.
2. SAR forces were launched, but could not locate the downed crew member. (The SAR forces considered in this category included the HC-130, A-1E, HU-16, helicopters, and high-performance aircraft used to perform electronic search.)
3. No SAR was dispatched because of the hostile environment.
4. Personnel associated with aircraft which had no contact with any ground facilities or airborne aircraft after takeoff. This category

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differed from (2) in that the area of possible search was much larger and ill-defined.

5. Personnel involved in incidents in which it was doubtful that the crew members survived the incident. Although not officially carried as killed-in-action, it was reasonable to believe these crew members did not survive the incident.

6. Undetermined. This category differed from the previous category identified as "unknown" in that some judgment had been applied in separating the incidents, but sufficient data was not available to make a judgment on these cases.

Within the "contacted" and "unknown" categories for personnel downed in North Vietnam, the three categories (1) SAR Launched, Driven Off by Ground Fire (2) SAR Launched, Could Not Locate (3) No SAR Launched Due to Hostile Environment, contained the major potential for rescue rate improvement (Ref Tab P).

Major emphasis in analyzing the factors that prevented rescue in North Vietnam was placed on those incidents that fell in the three categories referenced above. North Vietnam had been divided into six RP's and this geographical division was used for reference throughout the analysis (Ref Tab Q). In seven incidents the rescue vehicle attempted the pick-up without fighter cover. In the other incidents, there was fighter support

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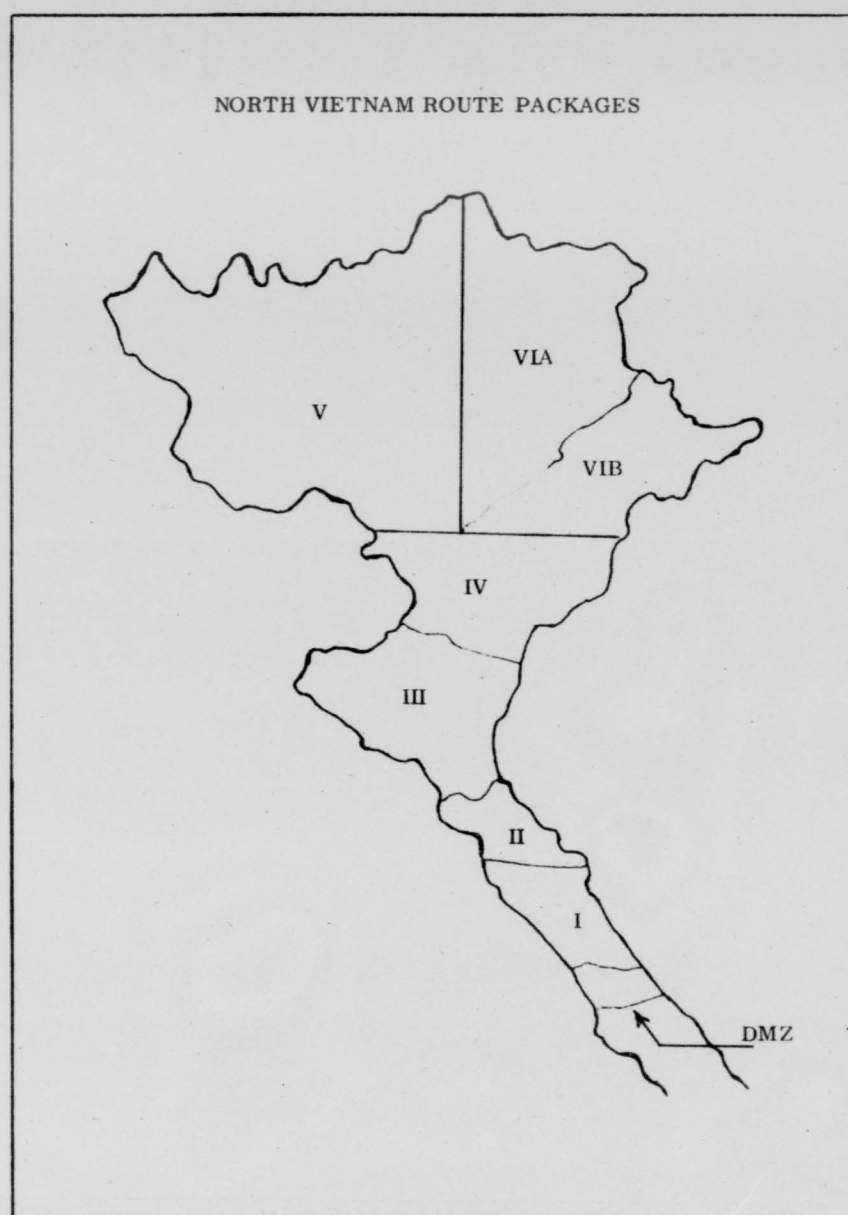
SECRETCONTACT/UNKNOWN STATISTICS
NORTH VIETNAM

	AIR FORCE		NAVY		Total
	<u>Contact</u>	<u>Unknown</u>	<u>Contact</u>	<u>Unknown</u>	
Driven Off	19	0	14	0	33
Could Not Locate	17	10	5	5	37
No SAR	28	16	1	7	52
No Contact After Takeoff	0	4	0	1	5
Doubt Survive	0	15	0	18	33
Undetermined	<u>1</u>	<u>13</u>	<u>0</u>	<u>1</u>	<u>15</u>
	65	58	20	32	175

LAOS
(Air Force & Navy)SOUTH VIETNAM
(Air Force)

	LAOS		SOUTH VIETNAM		Total
	<u>Contact</u>	<u>Unknown</u>	<u>Contact</u>	<u>Unknown</u>	
Driven Off	1	0	0	0	1
Could Not Locate	1	0	0	0	1
No SAR	0	1	0	0	1
No Contact After Takeoff	0	1	0	0	1
Doubt Survive	0	4	0	0	4
Undetermined	<u>0</u>	<u>3</u>	<u>0</u>	<u>7</u>	<u>10</u>
	2	9	0	7	18

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ranging from at least two to as many as 51 sorties; therefore, it was concluded that to provide supporting fire at the correct time was more important than the amount provided. This observation had two implications for future rescue operations. First, the desirability of providing some suppressive fire capability integral to the rescue vehicle. Second, was the need to provide fighter escort that had the speed and range required for timely escort of the rescue vehicle, as well as the speed to reach and protect the downed crewman.¹⁰⁵

There were 37 incidents that fell in the category of SAR Dispatched, Could Not Locate. In this category it was difficult to state precisely which factors prevented location, because of the obvious lack of knowledge of circumstances of the incidents. However, by examining those problems of location which arose during successful saves, some knowledge of the problem was obtained. There were three major factors that made the location of downed crew members difficult:¹⁰⁶

1. Failure of radio communication.
2. Downed during the hours of darkness.
3. Effects of weather.

Failure of Radio Communication. Radio contact between the downed crew member and the rescue forces was an important feature of a successful

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mission. The survivor could direct the rescue vehicle to his position as well as direct the fighter support against unfriendly forces in the area. There was a serious problem with the survival radios carried by the crew members as evidenced by the fact that of the 65 personnel recovered from North Vietnam, only 30 had radio contact with the rescue vehicle. Specific problems encountered with the survival radio were as follows:¹⁰⁷

1. Two cases of broken antennae.
2. Three cases of inability to transmit.
3. One case where the beeper would not turn off.
4. Three cases of inability to read and follow instructions while in a traumatic state following ejection.
5. Two cases of crew members not wanting to use radio because the noise would have given away their position.
6. Three cases of excessive radio transmission amongst the escort aircraft, rescue vehicle and the downed crew member to the point that rescue was impeded.

Of the personnel recovered, 53% appeared to have some radio difficulty. If this were a true ratio, it would mean that of the 37 personnel not located, about 20 had radio difficulties.

Downed During the Hours of Darkness. The time of day or night that Air Force aircraft were downed in North Vietnam was an extremely important

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consideration. Sunrise at 20 degrees North occurs at about 0520 hours in July and 0630 in January, while sunset is at 1840 in July and 1730 in January. Twenty-two Air Force aircraft were shot down in North Vietnam between the hours of 1600 and 1700 (Ref Tab R). This was the greatest number of incidents for any hour of the day. The location and pick-up of the personnel involved in these incidents had to be completed in about 1-1/2 hours if the problems associated with darkness were to be avoided. Thus, the need for night time capability extended to incidents other than those downed at night. The data supporting the requirement for a night time capability consisted of a small number of cases. This was a reflection of the fact that the overwhelming number of missions against North Vietnam were flown in daylight hours. If this were to change, the importance of night recovery capability would become more apparent. The lack of a night time recovery capability restricted the tactical force in the selection of the time of strikes.

FATE OF PERSONNEL DOWNED AT NIGHT

	<u>North Vietnam</u>	<u>Laos</u>
Incidents	12	4
Personnel Involved	26	4
Rescued	8	2
Killed	1	0
Contacted	5	0
Unknown	12	2

Of the eight rescued from North Vietnam, three were not picked up until

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SECRETNUMBER OF COMBAT INCIDENTS BY HOUR OF DAY

	<u>North Vietnam</u>	<u>Laos</u>
0000-0100	-	-
0100-0200	1	-
0200-0300	2	-
0300-0400	1	-
0400-0500	1	-
0500-0600	-	-
0600-0700	-	-
0700-0800	-	-
0800-0900	5	-
0900-1000	20	4
1000-1100	4	1
1100-1200	2	3
1200-1300	4	-
1300-1400	3	-
1400-1500	7	1
1500-1600	10	5
1600-1700	22	4
1700-1800	2	4
1800-1900	3	2
1900-2000	1	1
2000-2100	-	-
2100-2200	1	1
2200-2300	1	-
2300-2400	1	-

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daylight hours the following day, and four were picked up before 1940 hours local time, which was near the end of evening twilight. One of the two cases in Laos was rescued at 1835 hours and the other in the daylight hours the following day. Of the 30 personnel who went down in combat conditions at night, only one was rescued at night.¹⁰⁸

Effects of Weather. Two incidents were reported in which active search was terminated because of bad weather, while two other incidents were recorded in which bad weather was a factor.¹⁰⁹

There were 52 incidents that fell into the category of "No SAR Dispatched Due to Hostile Environment." There were no rescue vehicles launched for 52 personnel, 44 Air Force and 8 Navy. The location of these personnel by RP was as follows:¹¹⁰

<u>AIR FORCE</u>		<u>NAVY</u>	
<u>Route Package</u>	<u>Cases</u>	<u>Route Package</u>	<u>Cases</u>
VIA	41	I	3
VIB	3	III	2
		VIB	3

Ninety percent of the incidents occurred in RP-VI. A review of the operational reports made it quite apparent that the situation in RP-VI had changed between July 1966 and March 1967. Reports from the earlier part

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of the period indicated that SAR was not initiated unless positive and sustained communication had been established with the downed crewman. Later reports indicated that SAR forces would not penetrate the area even if communications had been established.¹¹¹

The primary reason for not launching rescue forces was the anti-aircraft defenses in the area of the downed crew member. The secondary reason was the distance the rescue forces had to travel through hostile territory to reach the downed crew members. The straight line distance from the forward operating bases in Laos to RP-VI was between 150 and 190 nautical miles. From the orbit points in northern Laos it was still 90 to 140 nautical miles. In actual operations in NVN, the rescue vehicle could not fly the straight line distance, but had to fly a circuitous route to avoid enemy defenses. The actual flight distance could be as much as three times the straight line distance. The HH-3E, with a true airspeed of 120 knots, required between two and four hours for ingress and egress from the area of the downed crewman. Some of the missions exceeded the 350 nautical mile radius mission capability of the HH-3E.¹¹²

The three remaining categories involved the following number of personnel:¹¹³

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No Contact After Takeoff	-	5
Doubt Personnel Survived Incident	-	33
Undetermined	-	15

These three categories showed little potential for rescue rate improvement.

The major factors that prevented rescue in North Vietnam were as follows:¹¹⁴

1. Presence of anti-aircraft defenses in the area of the downed crew member.
2. Distance of travel through hostile territory.
3. Lack of timely ground fire suppression.
4. Survival radio problems.
5. Downed in hours of darkness.
6. Adverse weather.

Successful recoveries were analyzed by dividing the rescue mission into five separate steps as follows:¹¹⁵

1. Hit to Eject
2. Hit to Dispatch Rescue Vehicle
3. Dispatch to Arrive
4. Arrive to Locate Survivor
5. Locate to Pick-Up

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A sixth category "Total Time From Eject to Pick-Up" was used to try to gain an understanding of time available for completing the rescue. The various reporting systems in effect did not emphasize time sequence data, so the sample taken of incidents in the last four categories was insufficient to allow meaningful conclusions to be drawn. The data that was available for the category "Time From Hit to Eject" was broken out into nine time frames running from zero to thirty minutes, and reflected personnel rescued and those not rescued within each of the time frames (Ref Tab S). The longest time from "hit to eject" in the "not rescued" category was six minutes. Previous studies made the point that a primary factor in successful rescue was the ability of the pilot to stay with the aircraft for several minutes after being hit, and that point was supported by this operational analysis.

The location of the pick-up points for successful recoveries in North Vietnam reflected that the majority of saves were made along the North Vietnam coastline or in the Gulf of Tonkin (Ref Tab T). The location of those crewmen with whom some form of contact was established, but who were not saved, reflected that the majority of these personnel were downed in the inland regions of North Vietnam with none shown in the Gulf of Tonkin (Ref Tab U). These figures supported the point that one of the most important factors in a successful recovery is the ability of the pilot to get:¹¹⁶

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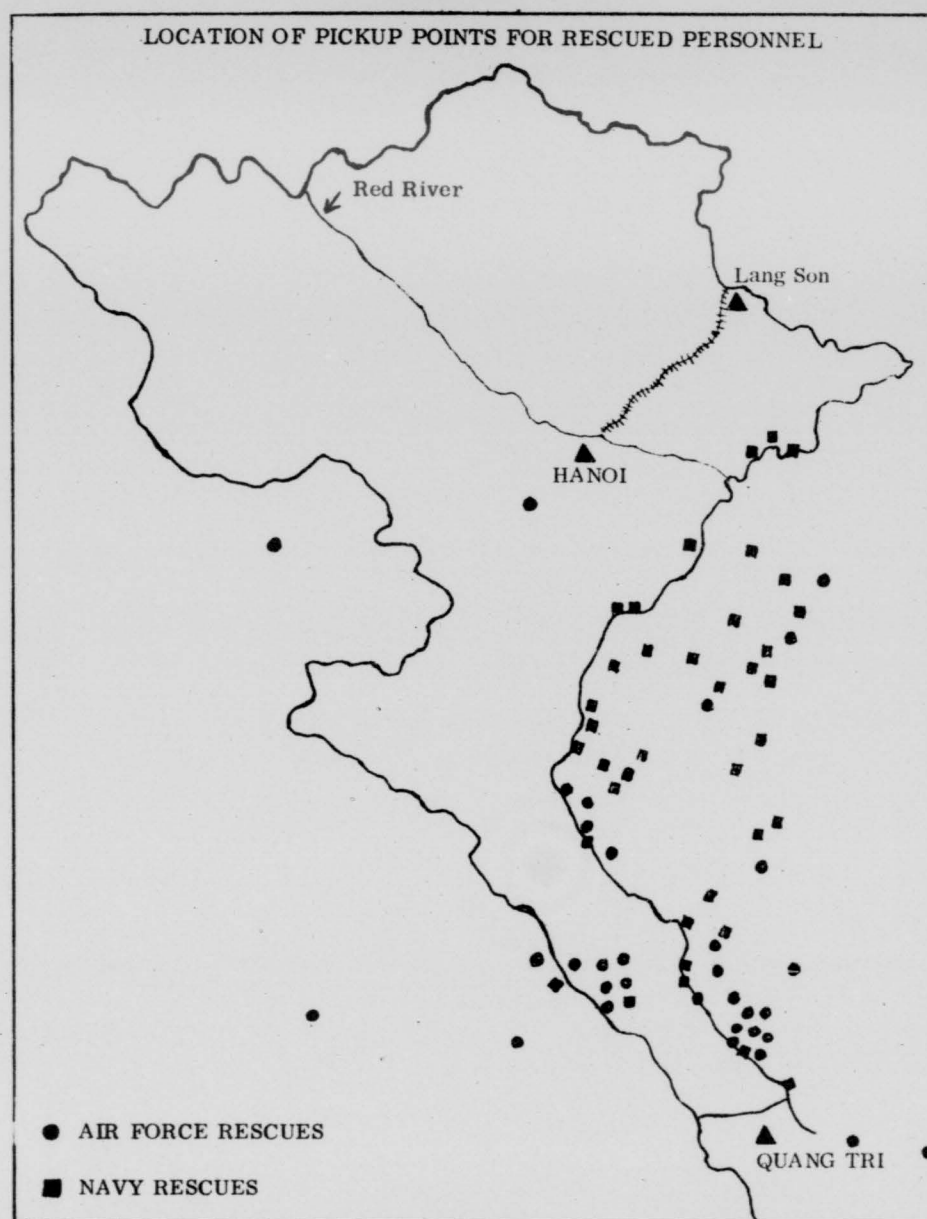
TABLE

TIME FROM HIT TO EJECT

<u>Time (Minutes)</u>	<u>Personnel Rescued</u>	<u>Personnel Not Rescued</u>
0 - 1	6	12
1 - 3	4	9
3 - 5	3	3
5 - 10	4	2
10 - 15	5	0
15 - 20	6	0
20 - 25	2	0
21 - 30	1	0
>30	2	0
	<u>33</u>	<u>26</u>

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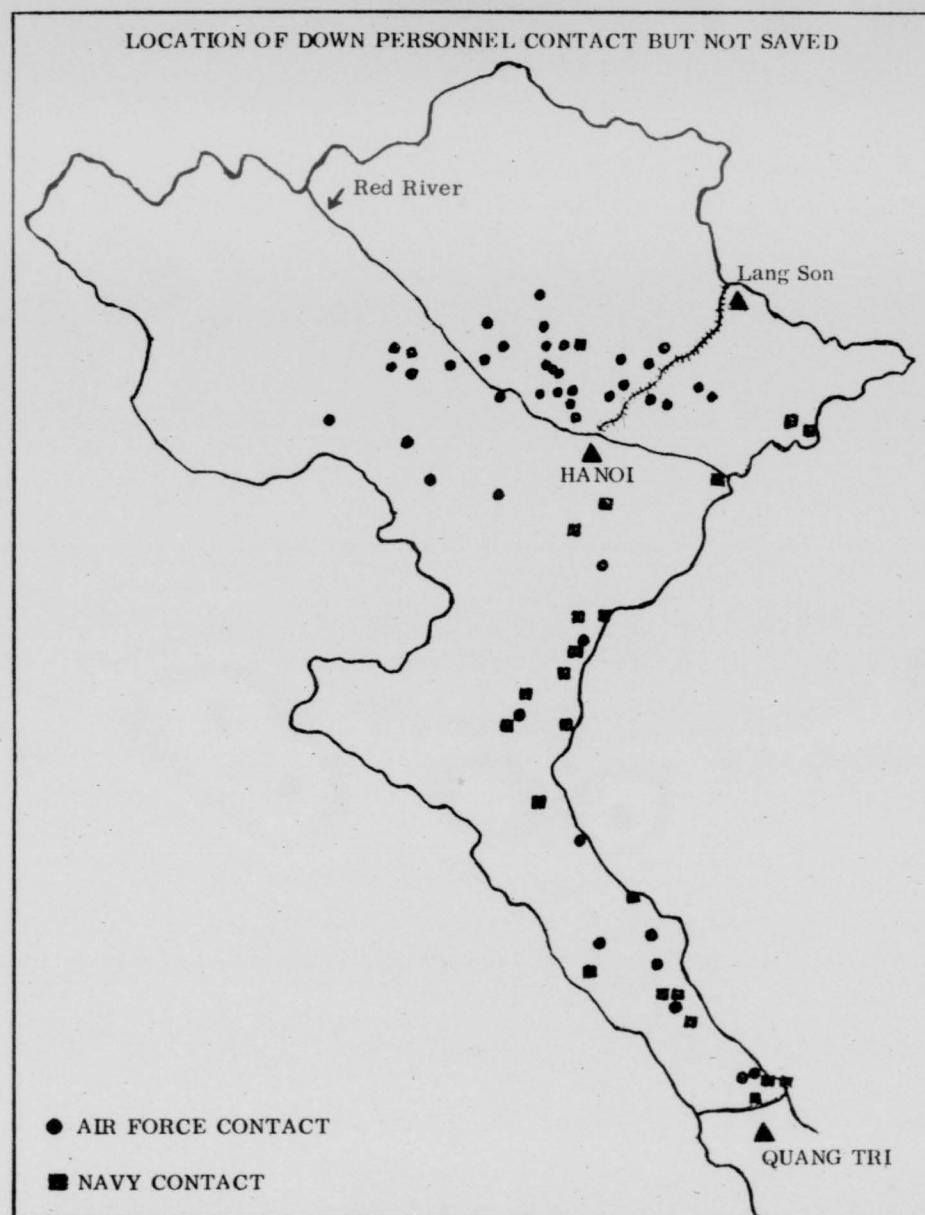


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Tab T

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Tab U

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1. To an unpopulated area.
2. As close as possible to the rescue forces.

An analysis of the elapsed time from hit to pick-up for those personnel rescued in North Vietnam indicated that 79% of the successful recoveries were made in one and one-half hours, or less (Ref Tab V). It was assumed that less than one and one-half hours would be available from "hit to pick-up" in the more densely populated areas of North Vietnam. Although the time data available on past experiences was not as complete as desired, it showed that the majority of the time was spent in the phase from "dispatch to arrive" on the scene. The time spent in locating and picking up the survivor was of great concern because the rescue aircraft was probably more vulnerable than when in transit. To improve the recovery rate in North Vietnam, the time spent in the phase from "dispatch to arrive" on the scene and the time spent in "locating and picking up the survivor" must be significantly decreased.¹¹⁷

The main problem encountered in the recovery of downed crewmen in North Vietnam was the limited amount of time available to effect the recovery. The geography of North Vietnam with the Gulf of Tonkin to the east and the mountains to the west afforded some relief from the time constraints. Therefore, it was logical that the majority of successful recoveries were

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TABLE

TIME FROM HIT TO PICKUP - NORTH VIETNAM

<u>Time (Hours and Minutes)</u>	<u>Personnel</u>	<u>Cumulative Percentage</u>
0 - 15	3	7%
16 - 30	11	33
31 - 45	7	49
46 - 60	4	58
1+00 - 1+15	4	67
1+16 - 1+30	5	79
1+31 - 1+45	2	83
1+46 - 2+00	1	86
2+01 - 2+15	2	91
2+16 - 2+30	1	93
2+31 - 2+45	1	95
2+46 - 3+00	0	95
> 3+00	2	100%

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made in these two areas. The recovery rate in North Vietnam could only be improved by bringing more of the land area of North Vietnam within the envelope of action whereby the rescue vehicles could penetrate and effect recovery within a limited time.¹¹⁸

The problems of penetrating the land area of North Vietnam were broken down into three groups:¹¹⁹

1. The first group involved those cases where it was possible to have rescue aircraft orbiting near the area of strikes, and available to penetrate through and around scattered anti-aircraft defenses to reach the downed crewmen. This type of area would include the long thin strip of North Vietnam extending from 20 degrees north, south to the Demilitarized Zone (DMZ) and the western portion of North Vietnam, west of the Red River, bordering northern Laos. The factors cited as most important in this type of rescue were as follows:

- a. Ability to orbit and be on station.
- b. Speed in getting to the downed crewmen.
- c. Speed in locating and retrieving the downed crewmen.
- d. Suppressive fire capability on a timely basis. A maximum radius mission of 100 nautical miles would be required for this type of mission. Of the 123 personnel not recovered from North Vietnam, 47 were in two areas adjacent to orbit points. Twenty-three were within 10 miles of

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the coast, 14 were from 10 to 40 miles, and 10 from 40 to 65 miles.

2. The second group of potential recoveries involved the area lying in the sector between the Red River and Highway Three, north of Hanoi. To reach this sector, the rescue vehicle would have to travel northeast from the Laos orbit point, penetrate the line of defenses along the Red River and enter the area west of Highway Three. The straight line distance from orbit point to the extremities of this sector was approximately 180 nautical miles, but to provide adequate flexibility for penetrating defenses, the rescue vehicle should have a radius mission capability of at least 540 nautical miles. High speed would also be desired as well as the ability to locate and pick up the survivors and suppress light ground fire. Of the 123 personnel not rescued, 25 were in the sector between the Red River and Highway Three.

3. The third area was to the east of Highway Three, north of Hanoi and Highway One, south of Hanoi down to 20 degrees north. This area appeared to be so heavily defended that the possibility of rescue within it was considered remote. During the time period of this operational analysis, 37 people were known to have gone down in this area. Of the 123 crew members not recovered, the downed location of 14 was not available. Of the 123 Air Force personnel not recovered in North Vietnam, 47 went down in an area that would require a rescue vehicle with an orbiting capability and high speed. Twenty-five personnel were downed in an area that would require a rescue vehicle with a 540 nautical mile range and high speed. Thirty-seven personnel

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went down in heavily defended areas where the possibility of rescue was remote, and in the case of 14 personnel, the location was unknown.

Based on the data available for the period July 1966 - March 1967, the sector with the greatest potential for rescue rate improvement was identified as the southern and western portion of North Vietnam, where speed was a more important factor than range. The second area of greatest potential was between the Red River and Highway Three, north of Hanoi, where range was the primary factor with speed essential. The third sector, west of Hanoi, presented a formidable task insofar as improving the rescue recovery rate. This sector was considered as possibly being beyond the capability of present or near-term future rescue forces.¹²⁰

The study recommended that any near-term improvement efforts aimed primarily for use in North Vietnam emphasize the following characteristics:¹²¹

1. Ability to reach orbit and remain on station.
2. Aircraft speed.
3. Radius mission capability of at least 540 nautical miles.
4. Night time capability.

Common requirements for all missions were identified as follows:¹²²

1. Integral fighter support to suppress light ground fire.

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2. Secure, reliable and simple means of radio communications between downed crew members and rescue vehicles.

3. Good intelligence information on location of anti-aircraft defenses.

A statistical analysis was performed as a part of the "Combat Aircrew Recovery Analysis."¹²³ The first test applied was to determine whether the rescue environment in NVN differed from that of SVN. Statistics for the "Contact" and "Unknown" categories were compared.

	CONTACT	UNKNOWN	RESCUED	KILLED	TOTALS
NVN	65	58	65	10	198
SVN	0	7	45	57	109
TOTAL	65	65	110	67	307

These figures did indicate that the rescue environments differed between NVN and SVN.

A comparison of the number of personnel downed versus those rescued in NVN, against those downed versus rescued in SVN, showed no significant difference.

	DOWNED	RESCUED	%RESCUED
NVN	198	65	32.8%
SVN	109	45	41.3%
TOTAL	307	110	35.8%

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However, when the number of crewmen who could not be rescued from either NVN or SVN were deleted from the totals, i.e., the number killed (57 personnel) deleted from the total number of downs in SVN, and the killed and presumed killed (25 personnel) deleted from the total number of downs in NVN, the adjusted recovery rate indicated a significant difference.

	DOWNES	RESCUED	ADJUSTED % RESCUED
NVN	173	65	37.6%
SVN	52	45	86.5%
TOTAL	225	110	48.9%

A comparison of sea and land rescues indicated a very significant difference between the two environments. The statistical analysis proved conclusively that if crew members could remain with their aircraft long enough to get over water before ejecting, their chances of recovery were greatly improved.

A follow-on recovery analysis was made for the period 1 April 1967 through 30 November 1967. Two hundred and seventy-five incidents of downed Air Force aircraft involving 503 personnel were examined. This analysis supported the previous report in that it showed that the greatest potential for improvement in the recovery rate was within the area of NVN, and that the recovery rate for this area had dropped from 35% to 27% since the last operational analysis covering the period July 1966 - April 1967.¹²⁴

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G. SAR Aircraft Deficiencies

As the tempo of the cry for improved recovery rate increased, additional studies were accomplished to emphasize the urgent need for the accelerated development of an aircraft, designed at the outset to satisfy fully the unique and distinct combat aircrew recovery mission of the U. S. Air Force. These studies and analytical efforts were not only directed toward the procurement of a vehicle specifically designed for the SAR mission, but also to provide justification for increased authorization of current equipment.

ARRS had been performing the deep penetration "combat rescue" role in Southeast Asia since late 1965. Although the success of the aircrew recovery in SEA was much more impressive than in past wars, it would have been more impressive if the USAF had available aircraft required for this era instead of converted transport helicopters. It was a generally accepted fact that more helicopters, with improved equipment, would greatly enhance the SAR capability.¹²⁵

While the HH-3E was fulfilling the near-term combat aircrew recovery requirements it was obviously deficient in terms of future requirements. It had reached its maximum growth potential, and its speed was not compatible with existing or future combat ACR requirements. The numerous and

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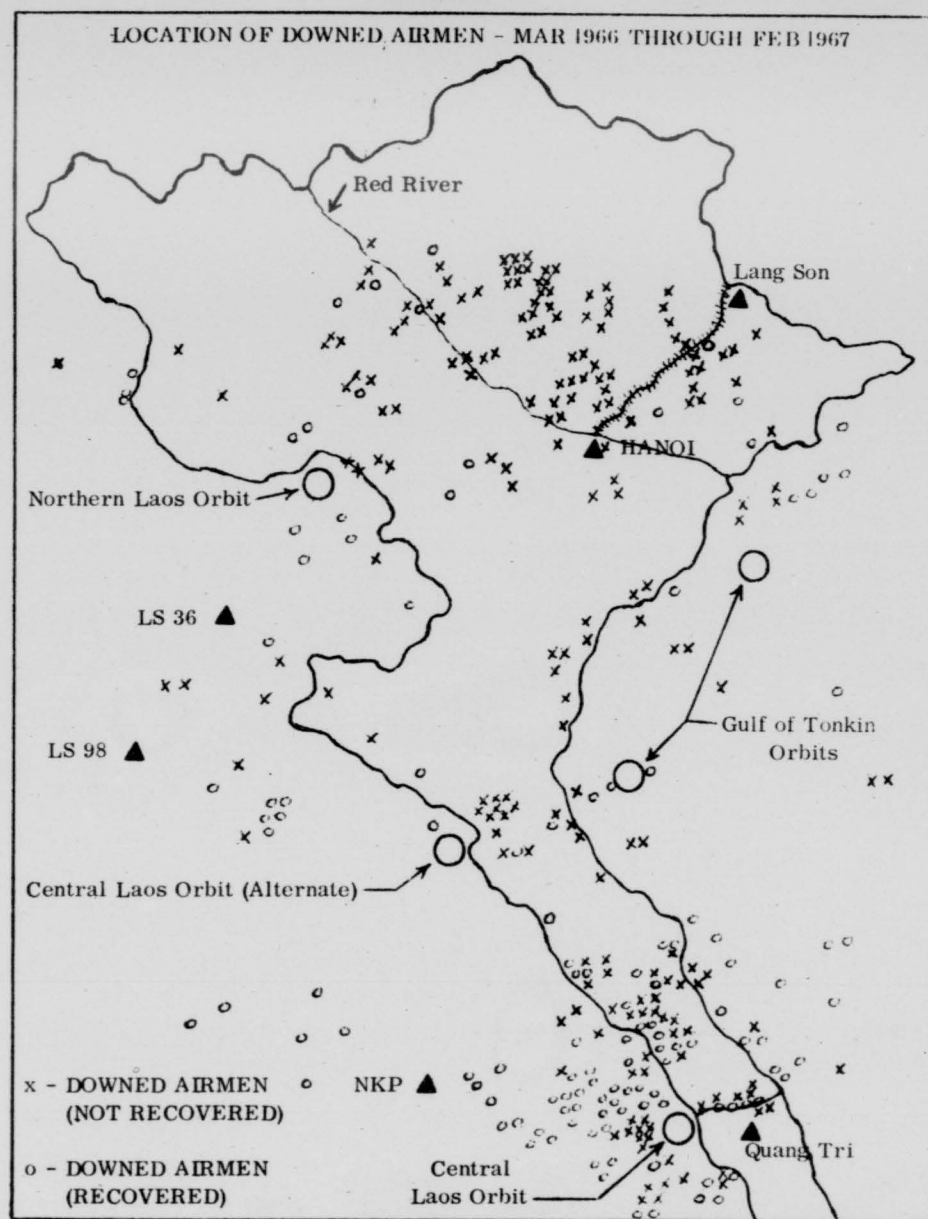
expensive modifications that had been made on the HH-3E emphasized the extent to which a transport aircraft must be altered to perform in the combat ACR role, and then only minimally. Alteration or adaptation of other weapon systems had not and would not satisfy the existing or long-term ACR requirement. Combat experience in Southeast Asia offered incontrovertible evidence of the quantitative/qualitative inadequacies of available ACR equipment.¹²⁶

A sizeable gap existed between the 3d Group 36.8% recovery rate, of all out-of-country downed airmen for the period March 1966 - February 1967, and 89% which were recoverable, i.e., 89% successfully survived a bailout or crash landing. A quick look at the number of airmen downed out-of-country during this time frame, versus the number rescued reflects rather conclusively that the record was not too impressive (Ref Tab W). The numerous airmen downed around and to the north of Hanoi were denied rescue effort because the distance from the forward operating locations was too great for the slow helicopters to arrive in time and the defenses too great for penetration without an Electronic Counter-Measure (ECM) capability. Noting the large number of airmen not recovered in these areas, and the relatively few saves further emphasized the inadequacy of the HH-3E in a combat role.¹²⁷

Addressing the same time frame, the 89% of the downed airmen who survived bailout or crash landing out-of-country, represented 419 of a total

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Tab W

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of 470 airmen downed. Of the 419 downed airmen, 3d Group attempted a SAR effort for only 222, i.e., the crew member was within range, the area was considered permissive for a rescue effort and the weather was suitable. Third Group rescued 173 airmen as a result of the 222 attempted SAR missions, and failed to rescue 49 crewmen. Twenty-three of these failures were directly attributed to lack of speed, either in getting to the man before he was captured or killed, or reaction was too slow to permit getting to the downed airman before darkness set in. One hundred ninety-seven downed airmen did not have a SAR effort launched for them. High speed, penetration aids (ECM), and aerial retrieval would have been required to give these downed airmen a chance for rescue. It was also mandatory that reaction time be minimized to prevent the enemy from moving aircraft and defensive weapons into the recovery area. Automatic small arms fire was the greatest deterrent to successful recovery, once in the immediate recovery area.¹²⁸

The 3d Aerospace Rescue and Recovery Group was requested to conduct an operational analysis to provide data that would aid in determining the valid requirement for a Combat Aircrew Recovery Aircraft (CARA). The results of this operational analysis, coupled with actual SEA SAR combat experience, dictated that the single most important parameter for successful combat ACR was to minimize the time from bailout to recovery. Combat experience gained by the 3d Group and a detailed analysis of SAR mission

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reports showed the downed airman stood a very good chance of rescue, even with current equipment; provided he did not bail out over a heavily populated area, and the rescue aircraft could get to him within 15 minutes. The chance of survival lessened with time; and if it took the SAR force longer than 30 minutes, the downed airman's chance of recovery deteriorated very rapidly. The 3d Group analysis indicated that the desired speed regime for a combat aircrew recovery aircraft must be between 360 and 1,000 knots. This was based on the assumption that 30 minutes from bailout to arriving over the downed airman was a reasonable maximum to use for design purposes, if speed must be compromised in design trade-offs.¹²⁹

Speed was also a highly important factor when considering the ability to penetrate highly defended areas. A detailed analysis of anti-aircraft weapons used in SEA was conducted to determine how long an aircraft was within range of each type weapon. This analysis considered maximum detection range with no ECM capability, reaction time and range of the ground weapons system, and speed of the rescue vehicle. To establish a relationship between current capability and proposed capability, airspeeds of the HH-3E and the HH-53B were compared to the CARA vehicle traveling at 400 and 1,000 knots true airspeeds (Ref Tab X).¹³⁰

That portion of the operational analysis undertaken to substantiate

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MAXIMUM VULNERABILITY OF SAR AIRCRAFT TO AAA

AAA Weapon, mm	<u>Vulnerability Time, Seconds</u>			
	<u>HH-3E</u>	<u>HH-53B</u>	<u>CARA</u> <u>400 kts</u>	<u>CARA</u> <u>1000 kts</u>
12.7	32.7	26.2	9.8	3.9
14.5	45.5	36.3	13.6	5.4
23.0	65.5	52.2	19.6	7.8
37.0	55.5	44.2	16.7	6.7
57.0 on carriage	77.1	60.1	23.2	9.3
57.0 off carriage	197.0	158.0	59.2	23.7
85.0	272.0	218.0	81.4	32.6

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the requirement for the most effective ECM equipment for the CARA, pointed out statistically the complete inadequacy of a helicopter in the heavily defended environments of Southeast Asia. HH-3E sorties in NVN were compared with other aircraft and crews operating in the same combat environment. Aircrew loss rates per 1,000 sorties, and crew member survivability probabilities for 100 NVN missions showed the helicopter had a higher loss rate in NVN and Laos and a lower crew member survivability rate. The F-4C and RF-4C and crews survived quite respectably although penetrating the "hottest" of areas denied to the HH-3E's. The loss rates of downed airmen and probabilities of surviving 100 missions by RP reflected RP's V and VI as having a very low survivability rate (Ref Tab Y).¹³¹

Route Packages V and VI accounted for 60% of combat losses, while receiving only 16% of the total sorties. This dictated that highly defended areas where more airmen were downed, required the major SAR effort. Only 22% of downed airmen were rescued by all forces from RP's V and VI as compared to 50% for RP's I through IV. The heavily defended Red River and railroad complex to Lang Son denied 79 airmen a SAR effort. Twenty-two airmen downed along the Gulf of Tonkin coast were denied rescue because of the heavily defended coastline. In these two areas alone SAR forces would have had to penetrate highly defended areas to effect recovery of 101 airmen.

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SECRET**AIRCRAFT LOSS RATES PER 1000 SORTIES**

<u>Area</u>	<u>HH-3</u>	<u>A-1</u>	<u>F-105</u>	<u>F-104</u>	<u>F-4C</u>	<u>RF-4C</u>	<u>RF-101</u>
NVN	8.8	5.1	4.4	2.7	1.9	1.2	3.0
Laos	4.2	3.4	1.0	1.7	0.4	0.6	0.4
Both	5.7	3.8	3.5	2.2	1.2	1.0	2.0

**CREWMEMBER SURVIVABILITY PROBABILITIES
FOR 1000 NVN MISSIONS**

<u>Area</u>	<u>HH-3</u>	<u>A-1</u>	<u>F-105</u>	<u>F-104</u>	<u>F-4C</u>	<u>RF-4C</u>	<u>RF-101</u>
NVN	0.52	0.82	0.76	0.77	0.88	0.96	0.76
Laos	0.88	0.83	0.99	0.92	0.99	1.00	1.00
Both	0.75	0.82	0.81	0.84	0.96	0.97	0.85

**LOSS RATES OF DOWNED AIRMEN AND PROBABILITIES OF
SURVIVING 100 MISSIONS BY ROUTE PACKAGE**

<u>Route Package</u>	<u>Loss Rate</u>	<u>Prob Surv 100 Missions</u>
VI	0.78	0.19
V	0.78	0.67
IV	0.00	1.00
III	0.50	0.89
II	0.50	0.93
I	0.50	0.92

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Denied the benefits of speed and maneuverability and lacking ECM, SAR forces would have been easy prey to the sophisticated defenses that ring these major target areas. Although the prime purpose of ARRS is the recovery of downed aircrews, the slim possibilities of completing these recoveries were greatly outweighed by the possibility of losing additional SAR aircraft and personnel. It was concluded that any future SAR vehicle operating in the environment of NVN would require a speed bracket between 360 and 1,000 knots, and that a 400 knot vehicle would be extremely minimal. Further, that ECM must be designed specifically for this vehicle to provide the capability to penetrate through and to loiter over highly defended areas.¹³²

The HH-3E helicopter was the primary SAR vehicle for out-of-country combat aircrew recovery until mid-1967. This helicopter was not designed for the ACR mission and could not operate in the highly defended areas where the major SAR effort was required. The HH-53B helicopter, which was scheduled to arrive in-theater in the first quarter of fiscal 68, was also not designed for the ACR mission, nor would it have a capability to operate in those areas where the maximum SAR effort was required. Therefore, the newest recovery vehicle to be assigned to the SAR effort in SEA had already reached its maximum growth potential prior to arrival in-theater. Although the HH-53B had a higher speed (25-30 knots) than the HH-3E, its speed was not compatible with existing ACR requirements.

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Correction of performance limitations and deficiencies of the HH-3E/53B could only be accomplished by the development of a complete new recovery weapons system, designed specifically to meet the unique recovery requirements with a reasonable degree of survivability in a combat environment.¹³³

The study and operational analysis efforts directed toward increasing and improving the effectiveness of the SAR force in SEA did not end with the compilation of statistical and narrative data. A review of the documentation available leaves no doubt that these studies and analytical efforts were utilized to strengthen and further justify the requirement for an improved rescue capability. The effort expended in attempting to improve the SAR capability in SEA encompassed not only justification of additional and new SAR vehicles, but sub-systems and survival equipment as well. Many "Southeast Asia Operational Requirement" (SEAOR) actions covering component and survival gear were in the mill, which required "expedite" action to insure timely availability of these items. These improvements in themselves would contribute immeasurably to an improved SAR capability.

H. SAR Force Posture -vs- FY 1967 Requirements

Identifying the requirement for new or improved equipment was by far the easiest part of the total task. No doubt the crew in the helicopter

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or the airman waiting to be rescued, failed to understand or appreciate the apparent lack of progress in providing an improved capability for search and recovery. However, for the most part, these personnel were not necessarily familiar with lead times, austere budgeting, priorities and the like. They recognized a deficiency, knew that equipment to correct the deficiency was within the state-of-the-art, and wondered why the administrative machinery wasn't geared to provide it.

Frustration was not necessarily reserved for the operating level. Those responsible for carrying the "improved rescue capability" message to the approving level were hard at work and experiencing their fair share of frustration. The planners were planning and re-planning, the message was being briefed to the General level, and the Generals, in turn, were using "hard sell" tactics to convince USAF, OSD and the House Appropriations Committee of the urgent need for an improved force.

The problems of search and recovery were not lacking for high level attention and interest. In early 1967, the Commander, MAC appeared before the House DOD Sub-Committee on Appropriations stating: ¹³⁴

Also of concern is that we just do not have enough Rescue forces to meet our world-wide requirements. Studies made by the Rescue Service, my headquarters and Air Force clearly show that we do not have adequate rescue and recovery forces to do an acceptable job world-wide. To counteract this imbalance, the Air Staff is

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reviewing a proposal for AN ADDITIONAL FORCE OF 44
HC-130's AND 36 HH-53's.

Considerable background material was provided to the Appropriations Committee to support the urgent need for accelerated acquisition of HH-53B ACR helicopters for SEA.

The approved program for SEA called for 22 HH-3's, 6 HH-53B's, 32 HH-43B's/F's, and 11 HC-130P's. Eight additional HH-53B's were approved by OSD as replacement for HH-3E combat attrition (four in FY 67 and four in FY 68). This force was to be in place during FY 1/68 and remain through the end of hostilities. The five HU-16's at Da Nang were programmed to phase out in FY 4/67 as the HH-3/HC-130P concept became operationally acceptable. The 3d Gp operational analysis of the SAR effort in SEA justified 11 HC-130P's programmed plus an ACR helicopter force posture for fiscal 3/72 as follows:¹³⁵

	<u>HH-3/HH-53</u>	<u>HH-43</u>
Out-of-Country	41	
In-Country	10 (SVN)	26 (SVN)
		11 (Thailand)
Total	51	37
Programmed	<u>28</u>	<u>32</u>
Deficiency	23	5

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The rationale used to support this increased force posture was two fold: (1) The area of responsibility in Southeast Asia; (2) The orbit concept to reduce the time between bailout and recovery. The area of responsibility of the Rescue Service for ACR was slightly more than one million square miles; 700,000 square miles of this area was jungle which was extremely hostile to survival. To increase and align the save rate with the aircrew recovery requirement, it was essential that time between bailout and recovery be reduced to an absolute minimum. Combat experience left no doubt about this fact. It has been conclusively proven that after one hour the race with the enemy in his effort to capture a downed American airman was lost. The chances of a successful recovery diminished rapidly after the first 15 minutes. To reduce this bailout-to-recovery time, an orbit concept over the Gulf of Tonkin, Northern Laos and Central Laos had been developed. Under this concept, air-refuelable helicopters, with HC-130P's providing command control and refueling functions, would orbit and respond to recovery incidents with minimum delay. Recovery techniques could thus be applied immediately with high probabilities of recovery within minutes.¹³⁶

The economic aspect of the ARRS mission was highlighted as a contributing justification for the increased force. The total lives saved by ARRS during fiscal year 1966 was 525 of which 348 were U. S. Military. Included in the 348 U. S. Military personnel rescued, were 128 pilots, flying

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24 different types of aircraft. The training cost was computed for 66 of these pilots and four types of aircraft. The cost of training these personnel represented a total of \$22,143,580 (Ref Tab Z). The total cost of operation for the entire Air Rescue and Recovery Service for fiscal year 1966 was \$59,224,142. This figured out to an average cost per save of \$112,808 (Ref Tab AA). This kind of supporting rationale when applied to the combat save record that was piling up in SEA more than justified the increased force posture (Ref Tab BB, Tab CC).¹³⁷

There was no doubt as to the high level interest directed toward the problems of search and recovery in SEA. Everybody realized the importance of the job being done as well as the requirement for additional and improved equipment. However, budgetary limitations and lead times were still problems that had to be reckoned with. During the April 1967 session of the House DOD Sub-Committee on Appropriations, the Chairman made the following comment with regard to the search and recovery role in Southeast Asia:¹³⁸

This is such an important area. Of course, a really magnificent job has been done, but if we can improve on that job by improved equipment, we ought to be trying to do it. I wonder if this should not be speeded up so we can undertake something during the period of the budget now before us. Is that impractical?

The Chairman of the House Appropriations/Armed Services Committee further stated:¹³⁹

CLASSIFICATION OF SAVES

Total lives saved by ARRS during FY 1966 . . . 525

Foreign civilian - 81*

Foreign military - 31*

U.S. civilian - 65*

U.S. military - 348**

525

The following number of aircraft pilots are included in the 348 U.S. military saves:

F-105	40	F-4	19
F-100	4	F-101	3
AC-47	2	OVI/OIF/E	7
HE-1E	1	O-19	1
A-6	1	L-19	1
A-4	9	H-34	1
B-57	4	SH-3	1
F-8	2	EL-B	1
C-123	1	P-2V	1
UH-1B	3	T-33	3
C-130	1	USN-H13	5
T-38	2	A-1	<u>15</u>
		TOTAL:	128

* Identification by a classification subject to determining a dollar return or savings to U.S. Government cannot be accomplished.

** Identification by grade classification and training requirements not available.

Training Costs of 66 pilots saved:

<u>Pilots</u>	<u>Aircraft</u>	<u>Per Pilot Cost of Tng</u>	<u>Total Cost</u>
40	F-105	\$382,040	\$15,281,600
19	F-4	\$283,860	5,393,340
4	F-100	\$248,510	994,040
<u>3</u>	F-101	\$158,200	<u>474,600</u>
66			\$22,143,580

AIR RESCUE AND RECOVERY SERVICE
ESTIMATED COST OF OPERATION
BY 1966

Personnel Costs:

Officer	\$14,637,714	
Airmen	17,288,216	
Civilian	<u>295,320</u>	
		\$32,221,250

Aircraft Operating Costs:

POL and maintenance		21,205,768
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Aircraft Attrition:

Lost to Air Force Inventory		2,486,000
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Other Operating Costs:

Supplies, TDY, utilities, contract technical services		<u>3,311,124</u>
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TOTAL COST:		<u><u>\$59,224,142</u></u>
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Total lives saved by ARRS during FY 1966		525
------------------------------------------	--	-----

Average cost per save	\$	112,808
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Identifiable pilot training cost related to pilots saved		\$22,143,580
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COMBAT SAVES				
TOTAL SAVES	Dec 64 thru 31 Dec 66	Dec 64 thru CY 65	1 Jan 66 thru 31 Dec 66	1 Jan 67 thru 3 May 67
<u>By Location</u>				
North Vietnam	88	37	51	26
South Vietnam	320	76	244	88
Laos	114	9	105	12
Thailand	7	5	2	-
Cambodia	1	-	1	-
TOTAL	530	127	403	126
<u>By Service</u>				
USAF	165	47	118	42
USN	61	29	32	26
USA	242	46	196	35
F/Military	34	5	29	22
Civilian	10	-	10	1
Other	18	-	18	-
TOTAL	530	127	403	126
<u>By Recovery Aircraft</u>				
HH-43	345	95	250	67
HU-16	46	24	22	1
HH-3	139	8	131	58
TOTAL	530	127	403	126
Summary of ARRS Saves				
1 Dec 64 - 3 May 67				
Southeast Asia Saves:				
Combat (Aircrew)	323			
Combat (Other)	333			
Non-Combat (A/C)	62			
Non-Combat (Other)	96			
	814			
Total Non-SEA Saves	487			
Total ARRS Saves 1964-1967 -	1301			

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<u>NON-COMBAT SAVES (SEA)</u>				
TOTAL SAVES	Dec 64 thru <u>31 Dec 66</u>	Dec 64 thru <u>CY 65</u>	1 Jan 66 thru <u>31 Dec 66</u>	1 Jan 67 thru <u>3 May 67</u>
<u>By Location</u>				
North Vietnam				
South Vietnam	73	18	55	39
Laos	-	-	-	-
Thailand	29	13	16	7
Cambodia	2	-	2	-
Other Areas*	8	8	-	-
TOTAL	112	39	73	46
<u>By Service</u>				
USAF	31	11	20	11
USN	23	18	5	14
USA	6	0	6	8
F/Military	6	2	4	6
Civilian	46	8	38	7
Other	-	-	-	-
TOTAL	112	39	73	46
<u>By Recovery Aircraft</u>				
HH-43	94	28	66	30
HU-16	8	8	-	-
HH-3	10	3	7	16
TOTAL	112	39	73	46
*South China Sea area				

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. . . . We have been talking about VTOL aircraft for so many years and the development has been a very slow process. Now we have found something where there is a significant need for this type of aircraft. If we are close enough to the breakthrough so we could put something on the production line and have it for purposes as important as rescue missions for our combat crews, we should try to do it, rather than let it drag on several additional years.

The Air Force representatives in attendance at this session of the House DOD Sub-Committee on Appropriations informed the committee that the present SAR capability was being increased by modifying the HH-53B to the HH-53C. This change primarily involved removing the high drag external fuel tank suspension system on the current model and uprating the engine by 400 shaft horsepower in each engine, for a total of 800 shaft horsepower. These changes were expected to increase the HH-53 speed to above 195 knots, or 20 knot improvement over the current models. The modification increased the basic cost of the helicopter by approximately \$300,000 per aircraft. The HH-53B/C were both air-refuelable from the HC-130 tanker. This capability, together with the improved dash speed, would increase ACR reaction by several valuable minutes.¹⁴⁰

The load carrying capability of a rescue helicopter was also sighted as becoming a very important factor in any future development. Sophisticated equipment was under development to improve Air Rescue capability in hostile areas, especially at night. These items included terrain avoidance radar,

track breaking radar, infra-red detection devices and gun-fire detectors.

Each of these potential add-on's would require a weight capability of the helicopter which could exceed a payload of 8,000 pounds in a specified mission situation.¹⁴¹

Passenger capability was the other item of concern. In SEA recoveries, the helicopters usually retrieved one or two men, with assistance from three to five crewmen in the aircraft. In cases where the downed airman was injured, additional floor space must be available to lay the man out for treatment. Emphasis should be placed on a helicopter with a capability of carrying not less than six to seven people, excluding the crew. It was re-emphasized that in the combat crew recovery and air rescue mission, the value of speed was quite significant. This was the major difference between a VTOL fixed-wing capability and a helicopter.¹⁴²

Development of VTOL aircraft to satisfy search and recovery requirements would be expensive. One contractor had estimated \$3.36 million per copy for an initial buy of 25 aircraft, while another contractor had submitted an estimate of \$2.2 million per copy for an improved helicopter. Both of these aircraft were quite expensive in comparison to existing equipment. An advance in technology as significant as that discussed at the April 1967 session of the House Appropriations Committee would require some detailed development which would be costly. Each of these proposals would have to be analyzed

with great care to insure adequacy of design for the mission under consideration.¹⁴³

Even though considerable high level discussion was taking place with regard to modernizing the Search and Recovery force, it would be several years before any such vehicle would be available. The problem still existed of providing an improved response to the recovery requirements, by:

1. Increasing the size of the recovery forces.
2. Improving the capabilities of existing equipment.

Increased forces: There had been considerable effort expended in the past toward obtaining approval for an increased force posture. Three comprehensive operational Requirements Analysis Studies (Hq ARRS Silver, Gold and Blue books) were submitted through channels to HQ USAF, which resulted in the submission of two Program Change Proposals (PCP's). Headquarters ARRS presented a PCP briefing to the Air Staff in July 1966. The resulting decisions by the Air Staff, JCS and the DOD would govern the SAR capabilities situation for the present and near future.¹⁴⁴

First, in May of 1966, an all Command message went out from USAF requesting projected SAR requirements. Staff personnel from Hq ARRS assisted the Air Staff Project Officer in preparing PCP 66-27, which was approved by the Air Staff Panel, the Air Staff Board and the Secretary of the Air Force. It was submitted to the office of the Secretary of Defense (OSD).

reviewed by JCS and objected to by the Navy; however, the Navy withdrew its objection just prior to the review by the Joint Chiefs of Staff. PCP 66-27 received the red stripe approval -- clear JCS approval and forwarded to OSD. The requirement outlined in PCP 66-27 received 100% blue-suit backing plus Army and Navy, a position which ARRS had never enjoyed prior to this time. The results of the OSD review were best outlined by a letter from the Director of Aerospace Programs to the Commander, MAC, dated 29 December 1966 which stated:

I have reviewed the actions taken by the Air Staff during this budget cycle to build and hold the rescue force. Herein is a brief of those actions leading to the OSD final budget decisions. As a result of ARRS project requirements study II, the PCR was submitted to OSD requesting additional aircraft procurement as follows:

1. 26 HH-3E's, which would increase the unit equipment (UE) from 43 to 64.
2. 41 HC-130H's, which would increase the UE from 54 to 91.

Our action on the "safe return" study of launch abort and post-deorbit recovery was submission of another PCR in November 1966. This PCR requested 30 additional heavy lift helicopters to increase the UE from 6 to 27.

OSD disapproved both these PCR's in program change decisions F-6-021 and F-6-041 dated 28 November 1966 and program budget decisions 245 and 246 dated 13 December 1966. The disapproval was given pending evaluation of alternatives and further determination of NASA's requirements.

Reclamas on these two decisions were submitted to OSD on 19 December 1966. These actions were based

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on data contained in the report of the Joint DOD/NASA/
Services Group and also a re-evaluation of Southeast
Asia attrition.

Reply to our reclama resulted in approval to procure
eight HH-53's; four in FY 67 and four in FY 68. The
OSD rationale for the partial approval is: The attrition
was based on SEA loss of three HH-3's in the last two
quarters of this fiscal year (1967). We projected this
to an attrition of one per quarter through the program
period. OSD questions the validity of this projection
because of limited accrual data. Approved HH-53 buy
was based on protecting production options that could be
expanded should increased attrition trends develop.
Also, OSD feels the HH-53 provides greater capability
and should ultimately replace the HH-3 through attrition.
We think this is satisfactory for the present. The
uncertainty of the NASA requirement and current funding
discussions between NASA and OSD has caused OSD to
defer a decision on an additional HC-130 and HH-53 buy
to support the future space recovery mission.

In summary: (a) OSD will not recognize the need for
increased UE in the ARRS and will apparently only act if
and when NASA unequivocally states additional requirements.
(b) Attrition for the helicopter portion of the force is
satisfied for the present and production options available
for the future.

It should be noted that the OSD disapproved the procurement of
additional HC-130's in FY 66 and FY 67; however, 24 additional HH-3's
were approved with delivery scheduled in FY 68 and FY 69.¹⁴⁶

Concurrently with the delivery of the HH-3's, the obsolete HU-16's
were to be phased out on a one for one basis. These decisions placed Rescue
in the anomalous position of facing increased mission responsibilities and

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requirements with decreasing numbers of fixed-wing airframes; with only a limited long term increase in long-range helicopters for the personnel recovery task.¹⁴⁷

Historically, aircraft assigned to ARRS have been far below the programmed force. When the programmed force was attained, it was approximately 60% of what was required to meet the ARRS assigned mission.¹⁴⁸ The USAF primary SAR force in SEA would not reach its approved OSD Program IV level until: 32 HH-43's - 11 HC-130P's - 22 HH-3E's and 6 HH-53B's were in place. It was estimated that this force would be attained in FY 3/68.¹⁴⁹

Improved capabilities: Combat analysis and experience had borne out the need to improve reaction time. With the present state-of-the-art helicopters, this could only be achieved by aerial refueling. When the HH-53 helicopters arrived in theater and possessed a night and low visibility capability, it would be able to perform the search and recovery mission 24 hours a day. Even then, with the attainment of this capability, lack of sufficient ACR aircraft would remain the major deterrent to fulfilling the total requirement. This was indicated by the peak level of conflict expressed in out-of-country sorties, at 18,000 per month, and in-country sorties at 58,000 per month.¹⁵⁰

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Although the recovery forces had been slowly increasing, all the statistical analysis made on the subject of Search and Recovery in SEA indicated a downward trend in the recovery rate. This was understandable considering the sortie rate over NVN and Laos had more than tripled in the last year and a half, while the SAR forces had not yet reached the number of aircraft required to meet the 1965 sortie rate.

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When the SAR force approached the programmed level late in 1967, it would be possible to provide an improved response to the recovery requirements. The programmed concept of operation would be implemented and close proximity ACR coverage would be provided from airborne orbital positions. The mission flexibility provided by aerial refueling would be employed in the Gulf of Tonkin at established northern, central and southern orbit points along the NVN coast line, as well as orbit positions in Laos. HH-53's operating from Udorn would provide some decrease in response time, primarily because of their greater speed and ability to respond from multiple airborne orbit positions over the high mountainous areas. Sufficient airframe hours would not be available to provide a continuous airborne coverage, and as a result the HH-53 would be dependent upon the use of Lima sites, which might be denied. Large areas that surrounded the northern Lima sites were in the hands of enemy forces a high percentage of the time. Experience showed these sites could be captured almost at the enemy's discretion.

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This situation would also hold true in the southern panhandle of Laos where HH-3's would provide close proximity orbits; within limitations of available airframe hours and availability of Lima sites. Even after acquisition of the programmed force, neither the HH-3 or HH-53 would possess penetration aids or night recovery capability. Consequently, vast areas of northern Laos and northern NVN would remain void of adequate rescue coverage.¹⁵²

The MAC Commander's recommendation on this subject as presented to the Air Staff in April 1967 was:¹⁵³

That accelerated acquisition of additional and logistically supportable H-53's would constitute the best interim improvement. Since the capability of this aircraft permits installation of an integrated night recovery system and other sub-systems without density altitude performance degradation, this aircraft is favored for these reasons and should be made available in the near term. However, regardless of the number made available, the full combat recovery capability still is not attained, primarily because the real requirement is an effective recovery weapons system that is able to accompany the combat tactical forces and survive in the same environment. This requires a complete combat aircrew recovery vehicle, designed at the outset to meet the unique and distinct mission of combat aircrew recovery.

A review of efforts by the Research and Development community is germane at this point in order to provide a better understanding of problems involved in achieving a full combat recovery capability.

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SECTION IV

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V. RESEARCH AND DEVELOPMENT EFFORTS

A. HH-43B/CH-3C - ACR

One of the most obvious lessons gleaned from experience in SEA was that equipment designed during peacetime without regard to the wartime environment was not satisfactory. This basic philosophism in the acquisition of equipment led to costly, time consuming modifications. In some instances, due to the immediate requirement, essentially "off the shelf" items were procured, which required militarizing and lengthy and costly testing after which it was found to be unsatisfactory or minimum satisfactory. On the other hand, immediate requirements were received which necessitated extensive R&D efforts to provide a solution. If one believed the theory of supply and demand, it was quite conceivable that cost of efforts were in excess of what would normally be expected in a less demanding situation.

Experience had shown and it was anticipated that combatants would be engaged in limited war type conflicts for some time to come. In order to have a more responsive military force and adequate aerospace equipment, a model of various levels of contingency operations in different geographical locations should be computerized. Proposed aerospace equipment would then be programmed into the computer to help determine the capability of the equipment to perform in the anticipated environment.

This approach has been used in various piecemeal manners; however, a comprehensive computerized program would prove time saving and cost effective.

For the most part, the R&D efforts expended in the direction of providing improved capabilities for the SAR force in SEA, resulted in as slow and frustrating progress as that experienced in attempting to obtain approval for new SAR vehicles or an increased force posture. To fully appreciate the complexity of the total problem a sequential understanding of the SAR R&D efforts must be provided.

In June 1964 when the HH-43B was initially employed in SEA as an out-country ACR vehicle, it was recognized as having very limited capability to perform the mission. However, this was the most acceptable VTOL aircraft in the ARRS inventory. The HH-43B did not have sufficient performance capabilities or instrumentation to effectively recover downed aircrews. Primary performance deficiencies were in airspeed and range. Lack of instrumentation and deterioration of rotor blades restricted the HH-43B from flying in Instrument Meteorological Conditions (IMC) or visible moisture, except for emergencies. The only aircraft instruments available for navigation were the Low Frequency/Automatic Direction Finding (LF/ADF), heading reference system and standby

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magnetic compass. Consequently, navigation was accomplished primarily by map reading and dead reckoning. Navigation was made more difficult due to the unreliability of available maps and prevailing climatological conditions. Communication difficulties between the helicopter, RESCAP aircraft, Crown aircraft and downed crew member were experienced due to the single UHF radio on the helicopter. The hoist system with only 100 feet of hoist cable was ineffective in the 200 foot forest canopy. Inadequate protection for the crew members and lack of survivability of the helicopter also limited its effectiveness as an ACR vehicle. The HH-43B did not have sufficient growth potential to effectively perform the out-country ACR mission so action was initiated to acquire a replacement helicopter with increased performance capabilities. The vehicle selected was a CH-3C.

The out-country ACR mission capability was substantially increased due to the better performance in range and air speed of the CH-3C. Also, the instrumentation and navigation aids made it a better helicopter for the required instrument flying. However, it was recognized that this helicopter was not adequately equipped to perform the long range aircrew recovery mission in a combat environment. There was still a lack of crew and vital component protection for survivability

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or armament for suppressing ground fire during the pick-up phase of the SAR effort. Even though the CH-3C provided an increased range capability, it was insufficient for missions which required extended loiter time for sterilization of the area prior to an attempted pick-up. Another deficiency encountered with the CH-3C was hover performance. Aircrew members strived to reach the highest rugged terrain available or the Gulf of Tonkin prior to ejection in order to increase their chance of not being captured. Consequently, parachute landings occurred at elevations above the hover capability of the CH-3C. In order to alleviate these deficiencies various modifications were made to the CH-3C, resulting in a designation of HH-3E.¹

B. HC-130P/HH-3E Team Concept

An in-flight refueling system compatible with the HC-130P aircraft, externally mounted auxiliary fuel tanks, and a fuel dump system were incorporated to extend the range/loiter capability and permit reduction of gross weight prior to hovering for pick-up. With the in-flight refueling modification the HH-3E could orbit close to strike areas during heavy concentration of aircraft strikes; thus, reducing the reaction time in high potential incident areas. Dumping fuel to the minimum required to rendezvous for in-flight refueling, permitted the helicopter to be

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hovered at a reduced gross weight and higher altitude. The survivability of the aircraft and crew protection was increased by the installation of armor, shatter resistant transparent areas, and self-sealing internal fuel tanks. The titanium armor protection for the pilot and copilot was for .30 caliber ball at 30 degrees obliquity and 200 yard range.²

Communication capability was enhanced by adding the Airborne Radio Communication (ARC) 44 and VHF 101 radios which provided a capability to communicate with other aircraft engaged in the recovery operation while talking with the survivor.³

Increased navigation capability was provided by incorporation of a doppler navigation system. The pilot's read out from this system was presented in grid.⁴

A variable speed (0-200 foot per minute) externally mounted hoist with "Forest Penetrator" seat attached to 250 feet of cable was incorporated to permit extraction of rescuees through the tall jungle canopy.⁵

Also included in the modification was the incorporation of an up-rated engine which increased the hover performance of the helicopter.

Although these modifications were costly and generally did not provide a timely SAR capability, they did contribute to improved recovery rates, once they became operational. The lack of growth potential of the helicopter being modified was still the major problem that had to be reckoned with. Longer range, greater speed and survivability were required to prosecute the northern Laos and northern NVN missions.

C. Southeast Asia Operational Requirements (SEAORS)

The need for a SAR vehicle with greater capability was expressed in Southeast Asia Operational Requirement (SEAOR) 15, dated 2 November 1965. DOD Project PROVOST (Priority Research and Development Objective for Vietnam Operational Support) 16 March 1966, identified the requirement for a high performance SAR aircraft. The objective was quoted as follows:⁶

SEA needs a new search and rescue aircraft capable of surviving in the hostile environment of anti-aircraft (AA) automatic weapons (AW) and small arms. This can only be realized through the development of a more responsive SAR aircraft capable of high performance and self-protection.

The most effective vehicle available to satisfy the requirement in the immediate future was determined to be the Marine Corps' CH-53A helicopter with changes as required to adapt it to the ARRS Combat Aircrew recovery configuration. Procurement by Military

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Interdepartmental Purchase Request (MIPR) to Navy was accomplished for eight HH-53B helicopters in an effort to correct this deficiency.

As the HH-53B had the same comparable growth potential problems as the HH-3E, MAC Headquarters on 2 May 1966, submitted a Qualitative Operational Requirement (QOR) for a Combat Aircrew Recovery Aircraft.⁷ Since there were no inventory aircraft capable of satisfying the requirement, a Requirements Action Directive (RAD) 7-39-(1), dated 31 January 1967, was prepared directing AFSC to prepare a Concept Formulation Package (CFP).⁸

More impetus was provided by the decreasing recovery rate of airmen downed in combat which pointed up the need to do everything possible to acquire an early improvement in search and rescue capability. Department of Defense Research and Engineering (DDR&E) requested a study that would lead to an early improvement in rescue capability over that expected of the HH-53 helicopter.⁹

Request for Proposals (RFP) went out to industry and aircraft manufacturers were asked to submit proposals within 30 days. The Source Selection Evaluation Board (SSEB) also worked within an extremely limited time frame.

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A determination was made through source selection procedures that no significant improvement over the HH-53C could be accomplished within the two or three year period desired. This requirement has not been fulfilled.

SEAOR 4 established the requirement for a ground fire warning device in September 1965.¹⁰ Development of an acoustical system which had received testing by the Army in July 1964, was initiated. Test and modifications continued through May 1967 with unsatisfactory results. Other systems were evaluated, but they did not satisfy the requirement, so a contract was let to develop a new system. Test of this new system in mid-1968 revealed a deficiency in the range requirement. Due to technical problems and priorities, this requirement has not been satisfied as of the date of this report.¹¹

SEAOR 7 established a requirement for a fuel dump capability on the CH-3 in January 1966. This capability permitted fuel to be dumped to allow a lower gross weight, which in turn permitted the helicopter to hover at higher density altitudes. An interim system was incorporated on the helicopters until this requirement was fulfilled.

SEAOR 11 established a requirement in September 1965, for a

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miniature, multi-channel survival radio for aircrews. Single channel radios were subject to enemy jamming, frequency saturation and provided the enemy a capability to lure SAR forces into a trap.

A contract was let in May 1966 to produce a four channel survival radio. Technical and production technique problems caused program slippage resulting in this requirement not being satisfied. ¹²

SEAOR 14 established a requirement for an air-to-air refueling system and side mounted guns for the HH-3E which was validated in November 1965. This modification permitted the HH-3E to loiter for an extended time during heavy strike periods, and provided suppressive fire during the hovering mode.

The modification of the SEA aircraft began in May 1967 after extensive feasibility studies, flight tests and prototyping. Delays were incurred in getting the contractor's modification team to SEA. ¹³ This requirement was fulfilled.

It was recognized in December 1965 that the various signaling devices used by downed aircrew members did not consistently penetrate the thick jungle canopy to provide a pinpoint location of the downed aircrew member. Smoke from the Mark 13, Mod 0, day-night flare was

suppressed and diffused to a degree that degraded its signaling capability and did not provide pinpoint location. The pen-gun flares usually did not penetrate the jungle canopy with sufficient illumination to insure attracting the rescue pilot's attention. The .38 caliber tracer ammunition in use, would penetrate the canopy, but had limited success in attracting rescue aircraft when used without the aid of two-way radio communication. Also, the discrimination of friendly tracers from those fired by hostile ground forces was difficult. SEAOR 27 was submitted in December 1965, in an effort to satisfy this deficiency. A variety of signal displays such as smoke, flares, dyes, and chaff capable of being launched from a small hand-held platform was required.¹⁴

After extensive investigation, and resultant technical problems in totally satisfying the requirement, two separate actions were initiated. The first action was procurement for a signal and flare launcher which as an interim item would meet only the flare and penetrating requirements of the SEAOR. Delivery of 20,000 of these units was made to SEA. The second action was awarding of a contract to develop an item which would meet the total requirement of the SEAOR. This item has not been developed and due to lack of confidence in the current contractor the Life Support System Program Office (SPO) has taken action to initiate another development contract.¹⁵

In April 1966, a requirement was identified to provide adequate location information when more than one ground locator beacon was operating in the immediate area of search. A serious degradation of signal intelligence was being experienced. The existing equipment required a search pattern of positive ground signal, such as smoke or flare, to pinpoint the position of the downed aircrewman; thus exposing both the rescue aircraft and the downed airman to enemy action. Heavy voice traffic, caused by radio failure on operational channels and airborne emergencies on rescue frequencies, seriously hampered rescue attempts. SEAOR 46 identified an airborne requirement for a system which provided multi-frequency homing, with direct readout of direction and distance and capable of audio readout of manually keyed signals from a rescue beacon. In addition, an aircrew beacon was required which would provide both range and direction information to the rescue aircraft, to allow accurate positioning of the downed aircrew member. The range requirement was temporarily suspended.¹⁶

The ground beacon portion of the requirement was being met through development of a small four channel rescue transceiver (URC-64) under SEAOR 11. This four channel transceiver would permit change of voice communication from one channel to another, counteracting

enemy jamming of frequencies. Due to elapsed time between the stated requirement; definition of the equipment to satisfy the requirement and technical problems which evolved, the rescue beacon has not been provided aircrew members.¹⁷

The airborne portion of the requirement was being satisfied through development of a multi-channel homer. Technical problems were encountered in providing sufficient resolution of multi-targets. As a result, this requirement has not been satisfied; however, Operational Test and Evaluation (OT&E) of the equipment was scheduled to begin in January 1969.¹⁸

SEAOR 49 submitted in January 1967 established a requirement for Engine Air Particle Separators for the HH-3E/53B to reduce the erosion effects of sand and dust on the engines.

Engine Air Particle Separators were provided on the HH-53B; however, the state-of-the-art could not provide an engine air particle separator for the HH-3E, without excessive power loss. This requirement has not been satisfied.¹⁹

SEAOR 58, submitted in September 1966, identified a requirement to provide pararescuemen a transceiver radio as an integrated

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part of the flight helmet. This would permit hands-free communication with the rescue aircraft when the pararescueman was put on the ground to assist survivors. The transceiver would operate on the same four channels as the URC-64 identified under SEAOR 11.²⁰

Technology from the URC-64 was being used to develop the pararescue radio. The technical and production technique problems associated with the URC-64 were also prevalent in the development of the pararescue radio. The major problem has been providing battery life of sufficient duration to satisfy the using command requirement.²¹

This requirement has not been satisfied; however, operations testing and evaluation started in November 1968.²²

SEAOR 75 was submitted in March 1967 to provide a device which would permit a downed airman to make a safe ascent to the rescue helicopter. The current forest penetrator was difficult to see, difficult to rig and tended to catch on limbs, branches, and vines. Several personnel had received serious injuries by riding the seat up through the dense foliage.²³

Modification of the forest penetrator to include characteristics considered necessary to satisfy the requirement was undertaken.

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Rigging and mounting the penetrator was enhanced by incorporation of vel-cro on the safety straps. Two personnel protective shield designs and a new designed forest penetrator with protective shield as an integral element were evaluated. One protective shield design was selected for further modification and evaluation. This requirement has not been satisfied due to low priority, insufficient lead time and slow response from industry.²⁴

SEAOR 93 was submitted in June 1967 to provide an Electronic Counter Measure Capability for SAR aircraft. North Vietnam had increased their radar weapons coverage to such an extent that the areas where rescues could be attempted were substantially reduced. Incorporating ECM equipment would allow deeper penetration and restore at least some of the areas that were currently denied to the SAR aircraft.²⁵

A comprehensive threat/requirements study was undertaken to determine the equipment configuration required to provide the capability requested.²⁶ In addition to the Aeronautical Systems Division (ASD) investigation, Cornell Aeronautical Lab (CAL) was contracted to conduct a thorough analysis. A Best Preliminary Estimate (BPE) was published by ASD without the benefit of the results from the CAL

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analysis.²⁷ The BPE for the HC-130 was subsequently disapproved by the using command and CSAF with guidance on the type of equipment to be included in a revised BPE.²⁸ Due to extensive analysis required, priorities involved and funding problems this requirement has not been satisfied.²⁹

SEAOR 97 was submitted in July 1967 to provide the rescue HH-3E/53B helicopters with a capability for programming and position readouts in latitude and longitude. The doppler navigation system programming and readout was a grid system. Downed aircrew member positions in many instances were relayed in latitude and longitude coordinates. Converting from LAT/LONG to grid was time consuming and the possibility of error was increased. The new readout would permit immediate programming of destination and eliminate error.³⁰ Investigation of replacing the grid readout with a LAT/LONG readout had been under progress; however, technical problems have prevented satisfaction of this requirement.

SEAOR 112 was submitted in July 1967 to provide aircrew members with a signal panel package to be used for laying out appropriate recognition symbols on the ground during escape and evasion. This requirement has been satisfied and equipment is now in use in SEA.

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The armor on rescue helicopters did not provide sufficient protection for the threat level. Its weight was excessive and created an additional hazard of projectiles ricocheting. The deficiency was recognized in May 1967. A working group from AFSC and MAC conducted a broad and searching review of space and material technology as applied to improving armor protection. This working group determined that state-of-the-art armor did not provide a significant decrease in weight using the same threat level. A significant increase in weight was realized when the threat level protection was increased to .30 cal. AP. There was no practical solution to prevent projectile ricochet. The working group recommended a Survivability/Vulnerability Analysis.³¹

On 11 August 1967, a requirement was initiated by SEAOR 102 to provide armor capable of stopping .30 cal. AP. bullets at 100 yard range and impacting at zero degrees obliquity without ricocheting.³²

RAD No. 8-62-(1), dated 30 August 1967, directed a Survivability/Vulnerability Analysis of various USAF helicopters.³³ SEAOR 102 was held in abeyance until completion of the S/V Study. Completion of the S/V Analysis was anticipated in December 1968, after which recommendations on aircraft configuration would be made. This requirement has not been satisfied.³⁴

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SEAOR 111 was initiated in April 1967 and identified a requirement to provide an explosion suppressant for aircraft fuel cells.³⁵

A team from ASD fabricated kits of polyurethane from in-house resources, and by 9 December 1967 had installed them in the auxilliary tanks of the HH-53B's in SEA.³⁶ Attempts by MAC and the Deputy for Limited War Office to have the suppressant installed in the integral fuel cells during production of the HH-53C were unsuccessful.³⁷

External fuel cells for the HH-53B/C were modified to incorporate the explosion suppressant.³⁸ Priority and funding have prevented the completion of the requirement.

In April 1967, SEAOR 114 expressed a requirement to provide an integrated Search and Rescue Night Recovery System. The airborne system was to provide navigation to the search area, pinpoint location, terrain/obstacle avoidance capability and allow covert operation.³⁹ Complementary equipment was also required for the downed aircrew member. These equipments were being developed as a sub-task to SEAOR 114.⁴⁰ Technology gained from the in-being Navy sponsored Integrated Helicopter Avionics System (IHAS) program was to be fully exploited.⁴¹

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One of the major problems encountered was identifying equipment which provided the best night viewing capability. Extensive detailed investigation by ASD and equipment manufacturers was conducted prior to selection. Due to high cost, time, and technical risk involved, it was agreed to have the HH-53B provided with a limited night recovery system, with the HH-53C configured with a full night recovery capability.⁴²

Prototyping of the limited system was underway and an Engineering Change Proposal (ECP) had been submitted to incorporate the full night recovery system.

The acquisition of a night recovery capability has not been realized due to the necessity of building a technology base with application in the VTOL field, and funding requirements.⁴³

SEAOR 125 was submitted in April 1967 for bullet-resistant windshields and side view panels for use on all SEA helicopters subject to hostile ground fire. During ACR operations helicopters must hover near ground levels where they are subject to hostile ground fire; aircraft armor can protect the aircrew from small arms fire within certain aspect angles, but the windscreens and side view panels offer no resistance. A stringent parameter of not adding weight which would interfere with helicopter performance characteristics was imposed.⁴⁴

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Investigation of current transparent armor determined that excessive weight increase and center of gravity shift were unacceptable. An R&D program to reduce the aerial density of transparent armor was recommended.⁴⁵ Results of the helicopter Vulnerability/Survivability Study would undoubtedly impact on this requirement which has not been satisfied.⁴⁶

The HH-53B/C engine starting system was unreliable and did not provide an alternate capability for starting in the event a malfunction occurred. The deficiency was initially identified by Emergency Unsatisfactory Report (EUR) in July 1967.⁴⁷ The helicopters were operating daily from remote sites in SEA, which were unprepared. Some did not have communication facilities. If a malfunction in the starting system occurred, the helicopter would have to be abandoned and possibly lost to hostile forces. The Helicopter Program Division of ASD was requested to investigate methods of providing a redundant starting system and provide the using command a BPE. The contractor was asked to conduct a study to determine various means of providing an auxiliary self-contained starter. Due to the operational impact 3d ARRGp was concurrently staffing a formal SEAOR (129) through 7th AF which was published on 7 March 1968.⁴⁸ ARRS recommended an interim solution and a long range permanent solution for the follow-on buy of HH-53's.⁴⁹ The aircraft manufacturer had been very slow in responding to USAF and ASD requests. This was the main

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reason the interim solution to this requirement has not been satisfied.⁵⁰

A requirement to modify the RT-10 survival radio to provide a dual channel capability was generated in May 1968, under SEAOR 135. The single frequency limitation of the RT-10 placed virtually all rescue communications on one frequency causing confusion and interference with other communications. A beeper operating on the single frequency could effectively block all voice communications.⁵¹

The Best Preliminary Estimate to satisfy this requirement was being prepared as of the date of this report. This requirement has not been satisfied.

A new SAR tactic introduced in SEA occasioned the use of riot agent gas to reduce ground fire directed at the rescue aircraft, and to protect the downed airman. SEAOR 144 was submitted in July 1967 and identified the requirement for a suitable gas mask to be used by downed aircrewmembers and rescue helicopter crew members. The approach was to provide a quantity of XM-28 gas masks for OT&E. Test results would determine if these masks were suitable or if a developmental effort was required.⁵² Due to lack of priority this requirement has not been satisfied.⁵³

The requirement for a Helicopter Maximum Hover Weight-Quick

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Readout Device was initiated on 14 October 1967 based on the recommendation of an Aircraft Accident Investigation Board.⁵⁴ Rescue helicopters are normally required to dump fuel prior to hovering for a pick-up. Performing the computations in the cockpit using Technical Order (TO) charts was time consuming and difficult. SEAOR 170, 1 March 1968, identified the requirement to provide a simple means to compute real-time data for maximum hover weight in flight without reference to flight manual performance charts.⁵⁵

The data has been worked up in the desired format; however, due to lack of priority this requirement has not been satisfied.⁵⁶ Delivery of the computer was scheduled for December 1968.

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SECTION V

FOOTNOTES

1. Msg, 3d ARRGp (RGCO) 50057 Mar 66, Subj: Personal for Rudolph from Beall, pp. 1-2.
2. Directive, USAF (AFSPDAD), Subj: System Management Directive, Directive Control Number SMD 6-47-485 (1)(H/CH-3C/E), 8 Feb 1966, pp. 6-7.
3. Ibid.
4. Ibid.
5. Ibid.
6. Ltr, USAF (AFSPDAD) to AFSC, AFLC, MAC, ATC, Subj: Authority for Acquisition of HH-53B Helicopters (AFSC Systems Number 482A), 27 Jul 1966, Attachment 1, p. 1.
7. Ltr, Hq MAC (MAORDR) to HQ USAF (AFRDC), Subj: QOR for a Combat Aircrew Recovery Aircraft, 2 May 1966, pp. 1-9.
8. Directive, USAF (DCS/RD), Subj: Combat Aircrew Recovery Vehicle RAD 7-39-(1), 31 Jan 1967, pp. 1-6.
9. Memorandum, for: Deputy Chief of Staff/Research and Development, Subj: Search and Rescue, 15 Mar 1967, p. 1.
10. Ltr, 2d AD (DO) to HQ USAF (AFRDQR), Subj: SEAOR 4 FY 66 QOR (Airborne Ground Fire Warning Device), 9 Sep 1965, pp. 1-3.
11. Report, ASD (Deputy for Limited War), Subj: Status of Combat Aircrew Recovery Projects RCS-HAF-XDD-R1, 1 July 1968, pp. 12-13.
12. Ibid., pp. 2-3.
13. Msg, Hq MAC (MAODCO) 05174 June 67, Subj: Theatre Clearances.
14. Ltr, 2d AD (DO) to HQ USAF (AFRDQR), Subj: SEAOR 27-FY-66 QOR (Foliage Penetrating Distress Signal System), 4 Dec 1965, pp. 1-2.

(Section V Footnotes - continued)

15. Report, ASD (Deputy for Limited War), op. cit., p. 4.
16. Ltr, 7AF (DO) to HQ USAF (AFRDQR), Subj: SEAOR 46-FY-66 QOR (Rescue Direction Finding and Ranging System), 3 Apr 1966, pp. 1-2.
17. Report, ASD (Deputy for Limited War), op. cit., pp. 2-3.
18. Ibid., p. 14.
19. Msg, AFSC (SCSAB) 23947 Jun 67, Subj: SEAOR Sand Separator H-3.
20. Ltr, 7AF (PIR) to HQ USAF (AFRDQR), Subj: 58-FY-67 QOR (Pararescue Transceiver Helmet), 28 Sep 1966.
21. Report, ASD (Deputy for Limited War), op. cit., p. 5.
22. Msg, ASD (ASWLN) 012132Z Nov 68, Subj: SEAOR 58 AN/PRC-87 Helmet Radio.
23. Ltr, Comdr 7AF to HQ USAF (AFRDQ-P), Subj: SEAOR #75 (FY 67) (New Forest Penetrator Rescue Seat), 7 Mar 1967.
24. Report, ASD (Deputy for Limited War), op. cit., pp. 17-18.
25. Msg, 7AF (DM) 40980 Jun 67, Subj: SEAOR 93 FY 67 Class V Modification, ECM Equipment for Search and Rescue (SAR) Aircraft. (Types: A-1E, HC-130P, HH-3E and HH-53B).
26. Msg, CSAF (AFRDQRF) 192213Z Dec 67, Subj: SEAOR 93 - Class V Modification, In Support of SEAOR 93 (ECM Equipment for Search and Rescue Aircraft).
27. Msg, CSAF (AFRDQRF) 081641Z Mar 68, Subj: SEAOR 93 V Mod (ECM for SAR Aircraft) BPE Evaluation.
28. Msg, CSAF (AFRDQRF) 141935Z May 68, Subj: SEAOR 93 V Mod BPE Revision.
29. Report, ASD (Deputy for Limited War), op. cit., p. 19.
30. Msg, 7AF (DM) 42229 Jul 67, Subj: SEAOR 97 FY 68 Class V Modification Improved Doppler Navigation System for HH-3E and HH-53B Helicopter.

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32. Msg, 7AF (DM) 43008 Aug 67, Subj: SEAOR NR 102 FY 68 Class V Mod, Lightweight Armor for HH-3E/HH-43B/F.
33. Directive, AFSC (SCCP), Subj: Helicopter Vulnerability/Survivability, Number 8-62-(1), 30 Aug 1967, ~~p. 1.~~
34. Report, ASD (Deputy for Limited War), op. cit., p. 28.
35. Ltr, Comdr 7AF to HQ USAF (AFRDQ), Subj: SEAOR #111 (FY-67) (Aircraft Fuel Cell Explosion Suppression), 3 Apr 1967, p. 1.
36. Msg, ASD (ASJT) 95201 Oct 67, Subj: Foam Filled HH-53 External Fuel Tanks.
37. Msg, ASD (ASJT) 95126 Oct 67, Subj: SEAOR 111.
38. MSg, ASD (ASJT) 212239Z Mar 68, Subj: Urgent Requirement for HH-53 Foam Filled External Fuel Tanks in SEA.
39. Ltr, Comdr 7AF to HQ USAF (AFRDQ), Subj: SEAOR #114 (FY-67) (Search and Rescue Night Recovery System), ~~pp. 2-3.~~
40. Report, ASD (Deputy for Limited War), op. cit., p. 23.
41. Msg, CSAF (AFRDQRA) 83307 Aug 67, Subj: SEAOR 114, Night Recovery System.
42. Msg, ASD (ASJT) 052325Z Dec 67, Subj: SEAOR 114, Search and Rescue Night Recovery System.
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45. Msg, ARRS (ARXRD) 50303 18 Aug 1967, Subj: SEAOR-125.
46. Report, ASD (Deputy for Limited War), op. cit., p. 27.
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48. Msg, 7AF (DM) 070640Z Mar 68, Subj: SEAOR NR 129 FY 68, Class V Mod, Redundant Start System and Battery for HH-53B.
49. Msg, ARRS (ARXRD) 212025Z Mar 68, Subj: SEAOR 129-FY-68, Class V Mod, Redundant Start System for HH-53B.
50. Msg, ASD (ASZTH) 092021Z Aug 68, Subj: Contract N00019-67-C-0401 HH-53C Pneumatic Start System.
51. Msg, 7AF (DM) 250305Z May 68, Subj: SEAOR 135 FY 68 Class V Modification, Two Channel Capability for RT-10 Survival Radio.
52. Msg, ASD (ASJT) 302217Z Jan 68, Subj: SEAOR 114, Survival Kit Gas Masks, dated 31 July 67.
53. Report, ASD (Deputy for Limited War), op. cit., p. 9.
54. Msg, 37 ARRSq (37 ARRSOP) 10398 Aug 67, Subj: Final Progress Report of Aircraft Accident Not Resulting in Aircraft Damage.
55. Ltr, 7AF to HQ USAF (AFRDQ-P), Subj: SEAOR #170 (FY-68) (Helicopter Maximum Hover Weight Computer), p. 1.
56. Msg, ASD (ASJT) 152239Z Apr 68, Subj: BPE for SEAOR 170 (FY 68).

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48. Msg, 7AF (DM) 070640Z Mar 68, Subj: SEAOR NR 129 FY 68, Class V Mod, Redundant Start System and Battery for HH-53B.
49. Msg, ARRS (ARXRD) 212025Z Mar 68, Subj: SEAOR 129-FY-68, Class V Mod, Redundant Start System for HH-53B.
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55. Ltr, 7AF to HQ USAF (AFRDQ-P), Subj: SEAOR #170 (FY-68) (Helicopter Maximum Hover Weight Computer), p. 1.
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VI. TRAINING

A. Aircrew Training Problems

Prior to ARS involvement in SEA, rescue equipment consisted primarily of a hodge-podge of SA-16, SC-54, and HH-43 aircraft. Although these aircraft had been in the Air Force inventory for a considerable period, ARS was faced by an increasing aircrew training problem. The deactivation of the C-54 Technical Training Unit (TTU) in June 1958 and the SA-16 TTU in December 1959 eliminated the resources for trained aircrews. This resulted in individual units conducting training programs to qualify their aircrew members. As the result of the individual units being unable to continue their training program, Hq ARS requested the re-establishment of the SA-16 school.¹ The SA-16 school was in operation as part of the 1707th Air Transport Wing (ATW) (MATS), at West Palm Beach, Florida, from July 1956 through April 1959. The SA-16 portion of the 1707th ATW moved to Brookely AFB, Alabama, in 1959 at which time it was relegated to a ground school only; no flying training was conducted.² The SA-16 school was subsequently moved to Eglin AFB during the summer 1960; flying training was not resumed until December 1963.

The ARS Commander again submitted a proposal to Hq MATS in July 1962, to re-establish both the SA-16 and SC-54 schools to include flying

training.³ This request resulted only in the activation of the HC-54 Mobil Training Unit (MTU) at Orlando AFB, Florida. Neither the SA-16 school at Eglin AFB nor the HC-54 MTU at Orlando AFB conducted flying training. The individual ARS units were still responsible for providing flying training for their aircrews.

As stated previously, the initial ARS involvement in SEA began with the establishment of Joint Search and Rescue Center at Tan Son Nhut in early 1962. The JSARC was originally manned with personnel on temporary duty (TDY) from other JSARC units in the Pacific Air Rescue Center area.⁴

The assignment of adequately trained personnel posed continuing problems throughout the existence of the JSARC. Personnel were assigned to this unit from many sources. In most cases, the commander or chief controller was withdrawn from other ARS resources. Even this procedure did not insure "professionally" trained personnel were assigned. Unfortunately, a formalized training program for SAR controllers did not exist. An aggressive, though often interrupted, OJT Program was pursued to qualify personnel for controller duties.

The necessity for replacement personnel to possess knowledge of Rescue Coordination Center procedures was stressed from the beginning

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of the ARS involvement in SEA.⁵

Since the USAF had no formal school for training personnel in RCC functions, the Air Force directed ARS to assign personnel to the U. S. Coast Guard School (USCG) in 1965.⁶ The ARS augmentation of the USCG school would insure a capability to train USAF SAR personnel. Due to the relocation of USCG forces the establishment of the school was deferred until October 1966.⁷ All personnel destined for SAR controller duties were required to attend the USCG school. In addition, an informal two-week orientation course at Hq ARRS was conducted for airmen controllers assigned to SEA. Although the establishment of the USCG SAR School provided valuable training, a specialized course tailored to wartime SAR procedures was essential.

For three years following the establishment of Det 3, PARC, the SAR effort in South Vietnam was all but non-existent. Due to the lack of SAR equipment and forces, adequate communications, and the lack of a SAR priority, Det 3, PARC, did not and could not function as a search and rescue organization.⁸ The subsequent build-up of forces necessitated the establishment of two sub-RCC's. This posed no new problems; however, the old problem "professionally" trained personnel was magnified.

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B. HU-16 Training

The HU-16 function at Da Nang originated as a TDY unit in July 1964⁹ and was primarily supported by personnel and equipment from the 31st and 33d ARSqs. These two units were in turn supported by TDY personnel and equipment from 41st, 48th and 58th ARSqs. A constant rotation of personnel to and from SEA was initiated to maintain a high degree of aircrew proficiency, especially in open sea landing and takeoff operations.¹⁰ The rotation of HU-16 TDY forces continued until July 1966, when the first contingent of HU-16 PCS personnel arrived at Da Nang AB.

This rotation policy of qualified HU-16 resources did not in itself impose any special training problems beyond the maintenance of aircrew proficiency requirements. The general depletion of ARS HU-16 resources had generated the requirement for a HU-16 flying school as early as 1961. An HU-16 ground school had been in effect; but it wasn't until December 1963 that flying training was re-established as part of the HU-16 TTU.

The continued overfly of the rescue fixed-wing aircraft program was reaching the point in June 1965, where the SAR capability in SEA was in danger of being degraded. In order to support the SAR activities

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in SEA, significant resources were withdrawn from other rescue units to the point that their capability was also being degraded. To meet the increasing requirements, ARS experienced a growing shortage of people, spares, aircraft and flying hours. The foregoing problems were to be resolved by a Permanent Change of Station (PCS) unit, equipped with HC-130's which would initiate the day/night combat recovery team concept with HH-3E aircraft.¹¹ However, slippage in HC-130 aircraft production coupled with 2d AD's reluctance to give up a proven recovery vehicle (HU-16) for an unproven theory (HC-130/HH-3E team concept) resulted in the retention of HU-16 aircraft and the conversion of the unit into a PCS organization.

The first group of PCS personnel entered the HU-16 TTU in January 1966 and started to arrive in SEA in July 1966. The 31st and 33d ARRSqs continued to provide airframes and personnel to SEA on a TDY basis until the final phase-out of HU-16 aircraft in SEA. The HU-16 TTU was deactivated in December 1966.

C. HH-43 Training

The initial deployment of ARS LBR forces did not impose special training requirements; the personnel deployed were fully rescue qualified. As of July 1964, many actions on the part of ARS had already been taken to ready the force that consisted of six aircraft (training) and 86 personnel.

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The main item that remained to be accomplished was specialized training for aircrews. Arrangements had been made with Hq Air Training Command (ATC) to accomplish this training at Stead AFB (then the location of the HH-43 helicopter school).¹² In addition to the specialized aircrew training the personnel completed Tropical Survival School at Albrook AFB, Canal Zone.¹³ The Air Rescue helicopter aircrew personnel selected for the LBR force were highly proficient in the HH-43B. They received training to physically and psychologically prepare them for combat operations. The flight mechanics and pararescue personnel assigned to RVN units were trained to perform as firefighters in addition to their normal duties. The pararescue personnel also received complete training on hoist and sling operations.¹⁴

The assignment of HH-43F units to the RVN for SAR under hostile conditions was to be an interim measure until replaced by a combat equipped HH-3C helicopter. This and subsequent reorganizations of SEA SAR forces altered the above original schedule. By 31 March 1968, the 38th ARRSq had grown to 14 detachments, four of which were in Thailand. The Air Training Command had been primarily responsible for the training of HH-43 aircrews since the aircraft's introduction into the ARRS inventory. Some aircrews were trained locally by ARRS when their

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detachments were converted to HH-43 aircraft. The initial and subsequent TDY deployments of LBR units provided qualified aircrew resources. The first two combat configured HH-43 units received special training; again through the auspices of ATC. The changing emphasis of the HH-43's role in SEA (LBR/ACR) resulted in changes to the ATC course curricula and the aircrew training directive MAC Manual 51-43. Therefore, the training of HH-43 pilots, flight engineers, firefighters and medical technicians did not impose any particular problems on ARRS. Pararescuemen (PJ's) assigned to SEA LBR/ACR received training in addition to their basic career specialty qualification. They received 13 hours of ground training and 12 hours of flying training in: hoist operations, fire suppression, and litter loading. Once the HH-43 aircrews completed their formalized ATC training they were assigned directly to operational ARRS LBR/ACR units.¹⁵

D. HH-3 Training

The USAF Wartime Guidance (WG) document, 1 March 1965, specified in part that MATS would provide trained and equipped combat-ready SAR units with the specific tasks of providing rescue coverage for aerial lines of communication and support of combat operations. The MATS Short-Range Wartime Requirement Plan provided direction to implement the WG Document.¹⁶

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In 1965 actions were in progress to provide a force of 16 HH-3's in RVN for the ACR mission. There was also a strong indication, at that time, that a follow-on buy of 15 HH-3E's for the CONUS would become a reality. The add-on helicopters would provide for rotation of trained crews to and from RVN, and an interim standby capability to respond to a second front situation, prior to the planned built-up of the combat recovery forces.¹⁷

In response to PACAF/MATS/ARS requests for combat modified CH-3C helicopters in SEA, HQ USAF took action to modify six. These helicopters were to be available in August 1965.¹⁸ The delivery of the modified helicopter slipped to September/October 1965.¹⁹ Hq ARS prepared a programming plan outlining staff actions required to achieve the operational mission status of six combat configured HH-3C helicopters in the 38th ARRSq.²⁰

In July 1965, Det 1 of the 38th at Nakon Phanom received two CH-3C's. These helicopters were facetiously dubbed "Jolly Green Giants" because of their size and camouflage color. They considerably improved the SAR coverage, but were only interim vehicles pending the arrival of the HH-3E.²¹

The HH-3E crews trained with CH-3C's at Stead AFB in August 1965 under the code name "LIMELIGHT 36". After a brief orientation and

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training period the unit arrived at Udorn in early October.²²

The following CH-3C flight crew qualification guidance was provided by Hq MATS:²³

1. Pending publication of the CH-3C aircrew standardization training manual; qualification, currency and procedures outlined in this letter, T.O. 1H-3(C)C-1 and AFM 60-1 will be used.

2. Prior to qualification, the first pilot or Rescue Crew Commander/Aircraft Commander will demonstrate proficiency/knowledge in applicable maneuvers/procedures outlined in T.O. 1H-3(C)C-1. The first group of personnel selected for ARS CH-3's received their aircrew training in accordance with ARS Programming Plan 568. Included in this program were procedures to qualify aircrews in combat rescue/recovery operations. The aircrews were also required to attend survival school after completion of their training at Stead AFB.²⁴

A special HH-3 Combat Crew Training Course was developed by Hq ARS and conducted by Det 15 of Eastern Air Rescue Center (EARC) at Patrick AFB, Florida. The course was established to provide combat rescue and recovery training to ten copilots in support of ARS Programming Plan 571. They received 20 hours of academic instruction and eight

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hours of flight training, which was completed on 8 April 1966.²⁵

One of the pilots deployed to SEA under Project "LIMELIGHT 36" was placed TDY to Det 15 to provide combat expertise to the training program and to assure that the training was tailored to combat conditions. Det 15 was selected as the training site because it was the only ARS CH/HH-3 unit not located in SEA. The unit was organized at Patrick AFB on 1 October 1964 to support the Air Force Eastern Test Range. It was the first ARS unit to receive CH-3C's; and was fully equipped on 8 March 1965 when it received its fourth aircraft.²⁶

Due to the continuing escalation of the war, Air Force directed ARS to increase the SEA SAR force by ten additional HH-3E helicopters. These HH-3E's were to be delivered to ARS at the rate of two per month beginning February 1966.²⁷ A programming plan was developed to accomplish the actions required to provide the additional helicopters. A training program similar to that employed for the "LIMELIGHT 36" personnel was prepared. Completion of the Tropic Survival School was added to the aircrew requirements. A significant inclusion to this programming plan was the requirement for a combat aircrew training school.²⁸

A meeting at Hq ATC on 31 January 1966 examined the USAF capabilities to train HH-3E crew members to meet the objectives of ARRS

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Programming Plan 571. Representatives from HQ USAF, ATC, MAC and ARRS concluded that the ATC facilities could provide only the initial or entry level pilot qualification requirements stated in Programming Plan 571. ATC, limited by aircraft, personnel and associated support resources, was unable to provide the Combat Crew Training (CCT) specified in the ARRS plan. A summary of the CH-3C training that could be provided by ATC follows:²⁹

1. Ten basic CH-3C copilots were to be available March 1966. They would be graduates of the Undergraduate Pilot Training School (UPT) and have no potential to upgrade to Rescue Crew Commander during their SEA tour. Total flying time upon assignment would be 225 hours of which 105 would be helicopter time (H-19, 70 hours; CH-3C, 35 hours).
2. Fifteen potential Rescue Crew Commanders were to be available 1 May 1966. These pilots would be formerly qualified helicopter pilots possessing a minimum of 500 hours helicopter time, some of which was flown within the past two years.
3. Five former HH-43 Rescue Crew Commanders were to be available June 1966.
4. Two former HH-43 Rescue Crew Commanders were to be available July 1966.
5. Eight additional copilots were to be available in July 1966.

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They would have previous fixed-wing aircraft flying qualifications and would undergo helicopter transition training for the first time. They were projected to remain as copilots during their SEA tour.

6. The ATC flight training to the 40 pilots referenced above equated to 35 hours of basic CH-3C transition flying training. This, at best, only qualified the individual to the entry level required for an HH-3 pilot. The ARRS view was that 35 hours were insufficient to bring a helicopter pilot up to the minimum proficiency level necessary to meet the maximum performance proficiency demanded by the combat recovery mission in SEA. The critical nature of this situation was compounded by the fact that the majority of the potential Rescue Crew Commanders possessed the minimum total helicopter experience, required for upgrading. Fifteen of these pilots had not flown helicopters in more than two years prior to their ATC training. Hq ARRS stated that this situation was untenable.

The 12 HH-3 aircrews deployed to SEA in support of ARRS Programming Plan 568, completed ten hours of combat crew training in addition to the basic ATC transition course. This despite the fact that many were highly qualified and current in CH-3's prior to their ATC training. Based on a review of the qualifications of each pilot to be deployed under Programming Plan 571, Hq ARRS recommended the CCT Course be

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increased to 20 hours. ARRS stated that the Combat Crew Training should not be confined to the pilots identified for Programming Plan 571, but must also be provided to the replacements for the original HH-3 group deployed under Programming Plan 568.³⁰

The high degree of success and the minimum number of losses to SAR forces was largely due to the ARRS insistence that only highly qualified and adequately trained personnel be committed to combat recovery missions. ARRS was not aware of any other aircrews sent to SEA with only basic aircraft transition training. Due to diversified and exacting aircrew skills required to fulfill the combat ACR mission, ARRS requested that Air Force divert sufficient resources to accomplish CCT for HH-3 aircrews. The establishment of a permanent Combat Crew Training School (CCTS) would provide the training outlined in Programming Plan 571 and replacement training for Programming Plan 568 personnel. Continuous replacement training was also recommended.³¹

Turner AFB, Georgia, was recommended as a possible training site. The base had a capability to support HH-3 training. The 1370th Photo Mapping Wing, a tenant unit of Turner AFB, possessed a small number of trained CH-3C pilots and maintenance personnel, but did not have aircraft or adequate logistic support. Olmstead AFB, Pennsylvania,

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was chosen as an alternate site based on the fact a unit on that base possessed three CH-3C aircraft, well qualified maintenance personnel, supply facilities, adequate ramp space, etc. To augment the CCTS, wherever it was located, Hq ARRS proposed that HH-3E aircraft be diverted from direct shipment to SEA and instructors returned TDY from SEA or other USAF resources. Support personnel graduating from ATC technical schools could be diverted enroute to SEA to provide additional maintenance and supply support.³²

Both 2d AD and 3d ARRGp concurred that the establishment of an HH-3E CCTS was mandatory. Heavy operational commitments, lack of facilities and a hostile environment were cited as conditions that precluded the accomplishment of training in SEA. To support the necessity for combat crew training, the following was stated by 3d ARRGp:³³

The nature of the mission taxes each crew member to the limits of his professional ability. Thirty-five hours basic transition training in the HH-3E is not adequate to qualify a pilot or copilot in combat recovery tactics regardless of previous helicopter experience.

The 2d AD did not concur with the proposal to divert HH-3E aircraft to the CCTS. They considered this to be an ATC and Air Staff problem which should be resolved without degradation of present or programmed SEA force structure of operational capability.³⁴

On 31 March 1966, HQ USAF approved the establishment of an

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HH-3C CCTS for ARRS with six officers and 49 airmen authorized. Turner AFB, Georgia was chosen as the site for the CCTS. It would also serve as a marshalling point for all HH-3E personnel selected to man and support the additional aircraft programmed in ARRS Programming Plan 571A.³⁵ Three HH-3E's were ferried to Turner AFB, Georgia, between 15 May - 1 June 1966.³⁶ Three classes were conducted at Turner AFB to provide training to 138 aircrew and support personnel in support of Programming Plan 571A.³⁷

To preclude degradation of ACR capability in SEA, Hq ARRS requested the HH-3 CCTS be continued at Turner AFB to complete the training of replacement aircrews initially deployed in support of Programming Plan 568. Two additional classes were requested to fulfill this requirement. The HH-3 CCTS was to be permanently assigned to the 48th ARRSq, Eglin AFB, Florida, in conjunction with the establishment of the ARRS Specialized Aircrew Training School (SATS). However, the extensive delay in obtaining an adequate host-tenant agreement raised serious doubt whether adequate facilities were available to support the CCTS. The adequacy of facilities at Eglin AFB from the standpoint of personnel accommodations, classroom space, airspace reservations and training areas required to support the flight training requirements fell far short of those at Turner AFB.³⁸

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A compromise in the quality of training would result from the re-establishment of the HH-3 CCTS at Eglin AFB at that most crucial point in time. The training schedule had already been compressed in time to meet the Air Force objectives in SEA. The disruption incurred in transferring the school would result in the omission of a good portion of student training required to meet Air Force objectives. Any omission of training would seriously affect the capability of the students to accomplish the ARRS mission in SEA, especially aircrew recovery.³⁹

The training conducted at Turner AFB was based on the requirements listed in ARRS Programming Plans 568, 571, 571A and 582 as modified by recommendations from SEA as a result of actual combat experience. In addition two pilots were returned from the ARRS SEA HH-3 unit as advisors in adapting the CCTS program to combat recovery requirements.

The HH-3 CCTS was relocated to Eglin AFB, Florida, on 1 January 1967. The CCTS was incorporated into the 48th ARRSq. Actions had been underway to convert the 48th ARRSq into the ARRS training facility. The evolution of the 48th ARRSq into the ARRS Specialized Aircrew Training School will be discussed in Section VI G.

Two significant training areas that developed during the ARRS HH-3 CCTS training program were high altitude operational training and helicopter

in-flight air refueling.

E. High Altitude Training

The 3d ARRGp had become concerned about the adequacy of high altitude operational flying training provided to newly trained or retrained helicopter pilots arriving for duty in SEA. The relocation of the ATC Helicopter School from Stead AFB, Nevada, to Sheppard AFB, Texas, had seriously degraded ATC's capability to provide adequate training. Interviews with recent graduates of the Sheppard AFB school revealed that the high altitude and restricted area operational training missions were conducted at altitudes of 2,500 feet or below. Low altitude operational flying, which employed combinations of high gross weights and/or restricted power, did not adequately simulate flight characteristics of helicopters operated at high gross weights and high density altitudes. The operational combat mission of the HH-3E in SEA required considerable aircraft operation between 5,000 and 12,000 feet density altitude with associated hovering out of ground effect and/or landings. Moreover, ARRS helicopters were periodically requested to support other priority operations at high altitude. ARRS SEA operational commitments precluded the accomplishment of initial high altitude operational training for helicopter pilots in the combat theater. As a result, the 3d ARRGp recommended that action be taken to provide an expanded program of operational and restricted area

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flying training within the ATC Helicopter Pilot training program. Ten hours devoted to high altitude and restricted area operational flying training at a site similar to Stead AFB, where the pressure altitude and mountainous terrain simulated those in the combat zone, was regarded as minimally acceptable.⁴⁰

In response to the 3d ARRGp's recommendation, Hq ARRS submitted the following to Hq MAC:⁴¹

The high altitude mountainous terrain operation training being conducted at the ATC Helicopter Pilot School, Sheppard AFB, Texas, does not properly indoctrinate the student in high altitude operations. This important phase of helicopter training is being simulated by operating at partial power during training exercises that call for high altitude work.

There is no substitute for actual high altitude, high gross weight helicopter operation. Actual high altitude and mountainous terrain flying experience are essential for all helicopter pilots prior to graduation from Sheppard AFB. A major factor for once locating the helicopter pilot training school at Stead AFB, Reno, Nevada, was that of providing realistic training by adding adequate mountain training to its curriculum. There the helicopter student was given 15 hours of mountain flying experience in the H-19, and an additional five hours of mountain training in the H-43 or H-3. Actual mountain flying experience was gained by operating from landing sites from 5,000 to 8,000 feet in altitude.

The ARRS CCTS at the 48th ARRSq, Eglin AFB, Florida, was established to receive fully qualified helicopter pilots and, in approximately 35 hours, teach them rescue combat crew tactics to produce Rescue Crew Commanders.

With the H-3, H-53, and advanced CARA scheduled to perform air refueling and other more complex tasks, the helicopter or VTOL pilot will need more basic training at the ATC School as well as more complete combat crew or operation tactics training at an advanced school.

We recommend that the major helicopter users (Rescue, AAVS, and interested representatives of other Commands) meet with ATC Helicopter School personnel for the purpose of discussing requirements basic to all users. We feel such a meeting is necessary to aid in updating the current school curriculum to better qualify future helicopter pilot trainees.

A conference was hosted by ATC at Sheppard AFB, Texas, during the period 28 February-1 March 1967 to identify the helicopter pilot training requirements of the using commands and to examine the ATC pilot training program to determine if these requirements could be satisfied. Besides the using commands and the Sheppard AFB Training Center personnel, representation included the USAF Personnel Training Directorate and the USAF Military Personnel Center. Comprehensive briefings by ATC personnel indicated that the Helicopter School was turning out a much improved product over what was accomplished at Stead AFB. Graduates of the Sheppard School were receiving more instrument and night flying instruction. Both of these areas had been cited by the conferees as being inadequate in past training programs. However, the problem of ATC providing high altitude mountainous terrain training to helicopter pilot students could not be resolved. ATC did not possess the capability to

provide the requested training in addition to their program. The Air Training Command concluded that the requested training was a responsibility of follow-on training programs, such as the ARRS HH-3 CCTS.⁴²

Since efforts to have ATC provide actual high altitude training for helicopter aircrews were unsuccessful, the MAC Commander directed that ARRS have the capability to provide the training for SEA aircrews. Hq ARRS was requested to provide a list of the resources required to establish the training and a brief description of the proposed program to include details as to additional required airframes, instructors, programmed flying hours, support personnel and facilities.⁴³ In order to provide high altitude helicopter training, ARRS required two additional HH-3E aircraft at 50 flying hours allocated per month; four instructor pilots, two flight engineers and two pararescuemen; and approximately 18 additional support personnel. A similar training program as that developed for HH-53 aircrews was proposed to satisfy the HH-3 requirement.⁴⁴ To satisfy the high altitude training requirement, Hq MAC proposed that either ARRS transfer one of the three remaining CH-3C's from Det 15 to the 48th ARRSq or collocate the ARRS CCTS with the TAC CCTS at Shaw AFB, South Carolina. Neither proposal was acceptable to ARRS, which recommended that the two additional HH-3E's with required manpower and resources be assigned to the 48th ARRSq as previously suggested. It was

further stated that the addition of two HH-3's would provide the necessary capability to satisfy the high altitude training requirement, and this added depth in available resources would promote overall training efficiency and effectiveness.⁴⁵

As a result of this impasse, Hq MAC hosted a conference, 26-27 July 1967, to determine the best course of action to provide high altitude training for ARRS HH-3E aircrews programmed for SEA. The conferees agreed that a PCP for two additional HH-3E's and allied support for the 48th ARRSq would satisfy the long-range objective. A review of the existing MAC resources was accomplished in order to resolve the problem of providing training during the interim period until adequate resources could be made available. The conferees concluded that the resources of the 1370th Photo Mapping Wing, Forbes AFB, Kansas, (formerly based at Turner AFB, Georgia) would be utilized to accommodate the training program during the interim period. The actual training was scheduled to be conducted at Francis E. Warren AFB, Wyoming, and the facilities at Cheyenne Municipal Airport. ARRS HH-3 aircrews were scheduled to receive 15 hours of high altitude flying training.⁴⁶ MAC Operational Order 2-67 was published to establish the policy and procedures to provide high altitude helicopter training for HH-3 aircrews.⁴⁷ Six classes were conducted by the 1370th Photo Mapping Wing from 5 September 1967 to 20 April 1968.

A rescue training conference was hosted by Hq ARRS to discuss all phases of the training programs conducted by the 48th ARRSq and the assumption of HH-3 high altitude mountainous helicopter training. The training curriculum utilized for mountainous training was essentially the same as that used by the 1370th Photo Mapping Wing. This high altitude training program was predicted on the receipt of two additional unit equipment (UE) HH-3E's at the 48th ARRSq.⁴⁸ A Memorandum of Understanding was obtained from the Department of Agriculture for use of National Forest Lands (Pisgah National Park, North Carolina) to accomplish helicopter mountain training.⁴⁹ Arrangements were made with the 134th Air Refueling Gp, McGhee-Tyson Air National Guard (ANG) Base, Knoxville, Tennessee, for use of base facilities during periods of deployment.⁵⁰ The 48th ARRSq started this training in May 1968.

F. In-Flight Refueling Training

The second significant training development in the ARRS HH-3 program was the evolution of in-flight air refueling of helicopters.

A Flight Test Plan for refueling tests on the HH-3E and HC-130H was developed by ASD. Several of the primary test objectives were:⁵¹

1. To determine, evaluate, and define the operational flight envelope for the HH-3E/HC-130H aerial refueling system.

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2. To qualify two ARRS flight crew teams in refueling operations.
3. To establish and recommend operational refueling techniques.
4. To determine and recommend missions required to qualify operational crews for aerial refueling operations.

All of the primary test objectives were completed by 12 January 1967, including the training of an ARRS aircrew instructor cadre. A total of 600 aerial refueling connections were accomplished including 90 night refueling probe to drouge connections. A 60-day period following the testing was required for data reduction and publication of technical orders, flight manuals and training requirements.⁵²

In order to achieve the operational capability of the HC-130P/HH-3E team, a 3-phase program commensurate with the availability of trained personnel and mission capable aircraft was proposed.⁵³

Phase I was to include the in-country Service Test (Tactical Orientation and Evaluation). This phase was directed at marshalling refueling aircraft and in-flight refueling trained personnel to conduct typical mission profiles under controlled conditions. The tactical orientation would include as many aspects of the actual combat concept as

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could be expected within the constraints of limited airspace in non-hostile areas. These aspects included: simulated diversions from planned tracks to extended recovery missions; multiple or sequential wet refueling operations; simulated forming of task forces for operation under JSARC operations and many other realistic factors that would prove the operational usage of the system.⁵⁴

Phase II began with the HH-3E's assuming a portion of the Gulf of Tonkin ACR mission after the operational capabilities (Phase I) of the air refuelable helicopter system had been fully proven. As the HC-130P/HH-3E team capabilities increased (due to increasing availability of equipment and trained personnel), they would gradually assume the Gulf of Tonkin ACR mission, thereby proportionately reducing the HU-16 mission support requirements. Phase II would be completed when sufficient equipment and personnel were available to accomplish the mission without HU-16 support.⁵⁵

Phase III would constitute the routine and continuous HH-3E recovery coverage of the Gulf of Tonkin during daylight hours, as fraggged by 7th AF, and also embrace the introduction of HH-53B helicopters into SEA.⁵⁶

Every effort was made to expedite the assignment of HH-3E's,

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used in the air refueling test program, to the 48th ARRSq. The test program aircraft was the only available air refuelable HH-3E in the CONUS. The air refueling training of both HC-130H/P and HH-3E aircrews depended on the availability of the aircraft at Eglin AFB, Florida.⁵⁷ The test program HH-3E was transferred to the 48th ARRSq on 16 March 1967.⁵⁸

Operational procedures were developed and evaluated successfully during the test program, providing sufficient information to prepare ARRS Manual 55-4, "Aerial Refueling". This document was the basis for the initial air refueling training conducted at Eglin AFB during March 1967, and was incorporated into the HH-3E training program at that time. The first students (four HH-3E aircrews) to receive the training were qualified in the system on 5 April 1967 and subsequently assigned to SEA. Air refueling was an integral part of the HH-3E course curriculum and all subsequent students received the training. In addition to the program conducted at the 48th ARRSq, a Hq ARRS instructor team traveled to SEA and conducted an in-country ground and flight qualification program. The first training flight was successfully flown from Da Nang on 8 May 1967. The HC-130P commuted from Udorn on a daily basis for flight training. The first training flight was terminated with an operational refueling to allow the HH-3E to proceed on an actual recovery attempt.⁵⁹

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G. HC-130 Training

HQ USAF approved the ARRS request to reorganize the SAR units in SEA and validated the associated manpower spaces required by the reorganization. USAF did not consider it desirable to retain four HC-54 aircraft in the SEA SAR program as a PCS unit without a source from which to provide rescue trained personnel. Therefore, USAF requested that the HC-54 operation be continued on a TDY basis until 30 June 1966, at which time HC-130H aircraft were programmed to be assigned to SEA on a PCS basis. A PCP was requested by CSAF to include eleven HC-130H aircraft for SEA in the FY 66 budget.⁶⁰

The current four-engine aircraft in support of the combat ACR role were HC-54's from the 36th ARRSq and the 79th ARRSq. This withdrawal of resources was degrading their home station SAR capability. The HC-54 SAR potential was limited to that provided during peacetime operations and must be replaced with an aircraft suitable for a combat aircrew recovery role. This situation must be resolved with a PCS unit equipped with HC-130H's. The four UE HC-130H aircraft programmed for SEA were not available at the time and had to be reprogrammed. The manpower authorizations had to come from within ARRS resources. The ARRS four-engine commitments in SEA were fulfilled with a combination of HC-130H and HC-54D aircraft TDY from the 36th ARRSq and the 79th

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ARRSq. PCS HC-130H aircraft were programmed to be in place at Udorn by 1 July 1966.⁶¹

In order to meet the SEA HC-130H objectives, Hq ARRS planned to retain four UE HU-16B's in the 31st ARRSq and five UE HU-16B's in the 33d ARRSq. All inbound HC-130H personnel to the 31st ARRSq, including their corresponding training quotas at the TAC C-130 CCTS and ATC HC-130H Field Training Detachment (FTD) were cancelled. The excess HU-16B personnel inbound to build up the 33d ARRSq from a UE of five to nine aircraft, were either cancelled or diverted to the 31st ARRSq. An acceleration of the training program and required personnel actions for the 31st ARRSq was necessary to maintain their operational ready status in HU-16B aircraft.⁶²

In order to provide trained aircrews for Det 1, 37th ARRSq, Udorn, Hq ARRS programmed:⁶³

1. Six HC-130H crews were to be fully rescue qualified for combat operations at Hamilton AFB, California from 3 April through 26 June 1966.
2. The HC-130H aircrews were to receive training on the surface-to-air recovery (Fulton) system at Edwards AFB, California, utilizing ARRS resources.

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Three HC-130H aircraft were to be assigned to Det 1, 37th ARRSq and two HC-130H aircraft belonging to the 41st ARRSq were to be utilized in the training program. Instructor/flight examiner personnel for both flight and ground training were to be provided on a TDY basis from Hq ARRS, 54th ARRSq, 55th ARRSq, and the 67th ARRSq. The training program was completed on 26 June 1966. The Det 1, 37th ARRSq aircrews and aircraft departed the CONUS on 26 June 1966. Det 1, 37th ARRSq became operationally ready on 3 July 1966.⁶⁴

Hamilton AFB was chosen as the training site for the HC-130H aircrew training program in support of Hq ARRS Programming Plan 575. This base was chosen because it was the only CONUS AFB that could provide a collocation with an ARRS HC-130H unit with its associated AGE, spares, maintenance facilities and trained personnel. Eglin AFB was the only other CONUS base that contained an ARRS HC-130H unit. However, both Eglin and the 48th ARRSq were completely saturated and could not provide the training. In addition, the USAF M-16 weapon qualification school was located at Hamilton AFB and all ARRS aircrew members were required to receive this training. The close proximity of Hamilton to the USAF Survival School at Stead AFB, Nevada, was an added factor. Hamilton was also an ideal marshalling point for personnel traveling to SEA.⁶⁵

An urgent requirement existed to extend the rescue and recovery

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capability in SEA due to the escalation of hostilities. This was accomplished by establishing an HC-130H unit at Udorn AFB, Thailand. This was a phase in establishing an in-flight refueling capability between HC-130H and HH-3 aircraft. Increasing developments and requirements dictated that the forces be increased to provide in-flight refueling of both HH-3 and HH-53 helicopters.⁶⁶

To accomplish this, USAF Programming Document (PD) 68-4 was changed to reflect four HC-130H aircraft in place at Udorn, to be replaced by refueling modified HC-130H/P aircraft on a one-for-one basis beginning in November 1966. The UE would increase to six HC-130H/P aircraft during December 1966. Two UE HC-130H/P's were to be in place at Da Nang by February 1967 and increased to three during March and five during May 1967. This equated to six UE HC-130H/P assigned to Det 1, 37th ARRSq and five assigned to the 37th ARRSq.⁶⁷

Action was underway to establish a firm beddown base for consolidating all eleven UE aircraft into a HC-130H/P squadron at a centralized SEA facility that was capable of providing complete logistical support. The HC-130H/P operational readiness dates for SEA as published in USAF PD 68-3, could not be attained due to availability of aircraft and aircrew training quotas. As a result, Hq ARRS requested the changes to the PD as reflected in USAF PD 68-4.⁶⁸

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The 48th ARRSq at Eglin was designated as the training site for HC-130P aircrew members for rescue and recovery tactical and air refueling training. To attain the ARRS objective of 11 UE HC-130P aircraft and 17 aircrews by June 1967, the 48th ARRSq had to provide an accelerated transition and rescue qualification training to 17 aircrews and five unit overhead pilots. No air-to-air recovery system training was provided and only a few select aircrews received surface-to-air recovery system training. The first three aircrews did not receive refueling training due to the lack of CH/HH-3E/HH-53B (configured for refueling) availability. These aircrews were qualified in SEA. The 48th ARRSq provided the training as stipulated in Hq ARRS Programming Plan 583.⁶⁹

H. HH-53 Training

The training peculiar to the HH-53B was to be accomplished by ARRS at Patrick AFB, Florida. This was to be provided as soon as possible for crews and maintenance personnel prior to their deployment to SEA. The first two CH-53A helicopters were obtained on loan basis from the Navy. An interdepartmental agreement was negotiated for the loan to extend through the training period and be terminated when the first HH-53B was delivered to the U.S. Air Force. Production deliveries were scheduled at the rate of two per month beginning April 1967. The helicopters were to be camouflaged and delivered to ARRS minus the in-flight refueling equipment and would be retrofitted with the in-flight refueling equipment after

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deployment to SEA.⁷⁰

Due to the limited nature of the program, there was no formal Category I or II test program conducted. Testing was limited to that necessary for the development and qualification of equipment/installations peculiar to the Air Force operational configuration. Operational evaluation of the configuration during the initial tests was to reduce the time required for OT&E after delivery to the operational unit. The contractor's estimated performance data was used in the development of Air Force flight manuals.⁷¹

To accomplish the training of aircrew and support personnel, ATC provided funds to procure initial contractor training for an instructor cadre of pilots and maintenance personnel. ARRS was responsible for transition training of aircrew and maintenance personnel in the HH-53B. The first phase of training was to be conducted in CH-53A helicopters. ARRS Programming Plan 580 was developed to outline the training program to be provided. The plan reflected the establishment of a combat crew training unit at Patrick AFB to train the HH-53B personnel prior to deployment to SEA.⁷²

The training site for the ARRS HH-53B CCTS was changed from Patrick AFB to Eglin AFB as directed by HQ USAF. The following rationale was advanced to CSAF:⁷³

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. . . . Patrick AFB, with its associated space program, is not considered to be conducive to achieving a successful training program in this aircraft. This headquarters desires to locate the HH-53B training function with the 48th ARRSq at Eglin unless there are overriding considerations not apparent.

The contractor completed the training program for the HH-53B instructor cadre in November 1966, and the initial ground support personnel in December 1966. The T-64 jet engine training for the ground support personnel was completed in November 1966. Except for the initial cadre training and Contractor Type I training in ground instruction phases, ARRS provided all transition and rescue qualification training to HH-53B aircrews deploying to SEA. The first phase of air refueling training was conducted in CH-53A's and consisted primarily of formation flying to simulate in-flight refueling.⁷⁴

Due to production slippages and consequent delays in deliveries, Hq ARRS stated a requirement to extend the HH-53B flight training schedule through October 1967. The flight schedule as programmed (Programming Plan 580) was predicated on the return of the CH-53A aircraft to the U. S. Navy on 1 August 1967. The return of the aircraft was based on an inter-service agreement and an optimistic in-commission/Not Operationally Ready Supply (NORS) rate estimate for the HH-53B. Only two HH-53B's were to be available for aircrew training during the period

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1-15 August 1967. In order to provide high altitude and ACR training over mountainous terrain, one HH-53B would be required to deploy to the mountain training area (North Carolina). The remaining HH-53B would stay at Eglin to accomplish all of the other aircrew training requirements. An excessive NORS rate during this period would incur additional delays in the training schedule due to the availability of HH-53's. Hq ARRS requested the loan of the Navy CH-53A be extended to 15 August 1967, which was approved. The retention of the CH-53A provided sufficient depth of resources to meet the then programmed 31 October 1967 in-place date for aircrews and helicopters.⁷⁵

Due to aircraft production slippages and the "domino" effect on the training schedule, the aircrews did not begin to arrive in SEA until 12 August 1967. The full force was not in place until the early part of January 1968.⁷⁶

The problem of providing an HH-53 training capability at the 48th ARRSq to fulfill the ARRS SEA replacement requirements was identified as early as July 1967. At that time, the possibility of securing additional helicopters to effectively pursue a training program was dismissed because of the lack of available airframes.⁷⁷

The original training concept, as defined in Programming Plan 580, required the 48th ARRSq to provide both transition and tactical training to ARRS HH-53 aircrews. It had become apparent from the experience gained in the implementation of the 580 Plan that the 48th ARRSq did not have the capability to provide both the transition and tactical training for the HH-53B replacement aircrews. A training program was proposed to Hq MAC that could accommodate the replacement aircrew requirement; however, the extensive lead-in-time induced additional problems that were not acceptable from operational and personnel standpoints. An accelerated program equivalent to that in support of the 580 Plan could not be supported due to the lack of airframes and available flying hours.⁷⁸

There were three options available to realize a training program that could satisfy the replacement requirements and, if necessary, provide for a buildup:⁷⁹

1. Increase the number of HH-53's assigned to the 48th ARRSq.
2. Increase the allocated flying hours for each of the two HH-53B's assigned to the 48th ARRSq.
3. Reduce the number of training hours.

An increase in the number of UE HH-53's was not possible for at least a year. This delay would not have afforded the 3d ARRGp an orderly

nor timely flow of replacement aircrews. It was requested that every consideration be given to allocating additional HH-53's to the 48th ARRSq.⁸⁰

Increasing the allocated flying hours would not have necessarily created additional flying training hours. ARRS had not operated the HH-53 for a sufficient time to warrant increasing the allocated flying hour program. From a logistical support point of view, the then current 65 hours per month per aircraft flying hour allocation was a very ambitious objective.⁸¹

A reduction of the training hours was compounded by the additional requirements for high altitude and weapons training. Despite these factors, the reduction of training hours was the only feasible method of producing replacement aircrews within the 48th ARRSq's capability. A revised curriculum was proposed to higher headquarters for approval with the stipulation that it represented the minimum and not the desired training and should only be considered as an interim program. Any additional reduction of flying training would have infringed upon flying safety and produced aircrews that were inadequately prepared to prosecute the SEA SAR mission.⁸²

The proposal for the reduction of flying training hours was supplemented by more stringent prerequisite training requirements to insure the best available training was provided within the ARRS capability and to

minimize the effect of reducing the flying training program. The pre-requisites were:⁸³

1. All pilot students must complete the CH-3 twin turbine helicopter course.
2. All pilot and flight engineer students must complete Contractor Type I training in ground instruction phases peculiar to the HH-53B.

To provide a capability for the desired HH-53 training, Hq MAC suggested the following possibilities:⁸⁴

1. Commence training earlier.
2. Increase utilization rate.
3. Compress the trainee flow period by:
 - a. Eliminating the no-flying week between each class.
 - b. Program flying week from 5 to 5 1/2 or 6 days.
4. Reduce crew ratio in SEA.
5. Secure additional training aircraft:
 - a. Borrow HH-53 from Navy.
 - b. Divert one HH-53 from SEA.

The following discussion of the possibilities suggested by Hq MAC was advanced:⁸⁵

1. Commence training earlier-- The initiation of a training

program sooner than initially proposed by ARRS would produce aircrews before they were required. This would have resulted in either over-manning of the SEA units, contrary to Air Force policies; or the establishment of an additive training program to requalify aircrews due to loss of currency induced by the time lag between the graduation date and the port call. The additive training requirement would overtax an already strained training program.

2. Increase utilization rate -- Increasing the allocated flying hours for the HH-53 aircraft was not feasible. The authorized 65 hours flying program had not been attained nor was it likely to be in the foreseeable future. The 48th ARRSq had experienced an Operational Ready (OR) rate of 45%, an average Not Operationally Ready Maintenance (NORM) of 29.27 and an average NORS of 25.1% during the period December 1966 to July 1967.

3. Compress the trainee flow period by:

a. Eliminating the no-flying week between each class --

The elimination of the no-flying week was impractical for two reasons. First, the gap was provided to allow the instructors to maintain their currency and proficiency requirements in accordance with higher headquarters directives. Due to the limited manpower provided the 48th ARRSq to conduct training, the flight instructors had to also prepare and present the ground phases of instruction as well as the flight phases. Secondly,

and more important, the proposed HH-53 program required that 6.5 flying hours be generated for each flying training day. Elimination of the no-flying week between classes would have increased the number of flying training days per month and thereby exceed the allocated flying hours available. The average number of flying days per month would have increased to 22.4 and the flying training hours to 145.6 or 15.6 hours per month more than allocated; there would not have been any time for currency/proficiency flying requirements nor maintenance flight test requirements.

b. Program flying week from 5 to 5 1/2 or 6 days --

This suggestion was in direct contradiction with MAC directives. The then present planning factor of a five-day training week provided the weekends for "make-up" days required because of weather, maintenance, range scheduling and other delays.

4. Reduce the crew ratio in SEA -- The reduction of the crew ratio in SEA could not be considered at the time. There was no HH-53 operational experience factor available with which to determine the force size to prosecute the SEA mission. The HH-3 mission support requirements were used as a guide. However, caution was stressed in determining the requirements because of the increased sophistication and capabilities of the HH-53 over the HH-3 which could engender a proportionate increase in the scope of the HH-53 mission and the personnel required

to support it. It appeared to be more prudent at the time, to produce too many aircrews rather than too few.

5. Secure additional training aircraft:

a. Borrow an HH-53 from the Navy -- A minimal benefit could have been derived by this action. However, this benefit would have been reduced by the maintenance workload required to support the additional helicopter and the lack of ARRS tactical equipment aboard the Navy version.

b. Divert one HH-53 from SEA -- This would have been the most logical approach to increase the HH-53 training capability. Hq ARRS had initiated action to divert two aircraft from the follow-on buy to the 48th ARRSq for training purposes. Action to provide additional instructor and support personnel was required.

Many of the personnel trained through Type I training were scheduled to depart the 48th ARRSq prior to FY 69. The loss of these personnel coupled with the lack of selective manning and stabilized tours diluted the training capability of the 48th ARRSq. Provided the 48th ARRSq possessed the qualified personnel, the lack of manpower authorizations, adequate training aids and facilities would have precluded their providing this training. Until these deficiencies were resolved, Type I training was a necessity.⁸⁶

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Hq ARRS submitted formal requests for training to provide technical training for support personnel that were to replace those deployed in support of Programming Plan 580. The training requested was similar to that offered at Sheppard AFB for HH-3 personnel and the FTD training at McGuire AFB for HC-130 personnel. It was also stated that Type I training for personnel who supported the HH-53B would continue to be a requirement until such time as ATC was able to provide this training, or a school was established.⁸⁷

Higher headquarters secured Type I training for HH-53 personnel as requested by ARRS. The replacement training program started 1 April 1968 and continued on through 30 August 1968.⁸⁸

I. ARRS Tactical Crew Qualification School

Hq ARRS stated in April 1966:⁸⁹

Initial qualification, proficiency and currency training requirements for ARRS tactical aircrew members are rapidly increasing to such a degree as to cause grave concern to this headquarters. This situation has developed primarily due to the increasing world-wide ARRS mission requirements, especially in Southeast Asia and the aerospace program. In conjunction with increased mission activity, the introduction into the ARRS inventory of modern sophisticated aircraft, i.e., HH-3E's and the HC-130's, with their revolutionary new and inherent specialized recovery systems and capabilities, the initial and proficiency training requirements for the tactical aircrews have been greatly magnified.

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A formal briefing and a staff study on the requirement for an ARRS Tactical Crew Qualification School were presented to Hq MAC on 4 April 1966. The concept of operations in SEA and the deficiencies in combat ACR systems were addressed in a separate study. Justification for the formation of a HH-3 Combat Crew Training Unit had been submitted to higher headquarters on 7 February 1966 and subsequently approved by HQ USAF prior to the above briefing.⁹⁰

As pointed out in the staff study, the total aircrew initial qualification training requirement equated to 10,630 flying hours annually. This extensive amount of flying time could not be absorbed by the tactical units without degrading their operational capability to an unacceptable degree. For the most economical and effective utilization of aircraft, facilities and personnel, and to fully achieve the "Rescue Team Concept" it was imperative that this training be consolidated at one location. The study examined in detail all the factors associated with the problem. The establishment of the proposed school could be fully supported with manpower from within ARRS resources. Converting the resources of the 48th ARRSq to a tactical training unit would not degrade the priority world-wide mission responsibility of ARRS.⁹¹

On 27 June 1966, Hq ARRS and Hq MAC established the mission

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support requirements of the 48th ARRSq, which were consolidated into a statement and presented to MAC DCS/Plans. The statement was approved and utilized to negotiate a Host-Tenant Support Agreement between the 48th ARRSq and Eglin AFB.⁹²

Hq MAC stated in September 1966:⁹³

The mission and role of the 48th ARRSq is evolving into that of a unit with three missions:

1. Operations in support of select missions.
2. Training for all aspects of ARRS missions.
3. Specialized combat training to include the CCTS.

The collocation of the 48th ARRSq with Tactical Air Warfare Center and the Air Proving Ground Center provides a singularly unique opportunity to upgrade the full-range of ARRS recovery techniques, equipments and tactics.

In addition, Hq MAC requested ARRS provide a detailed plan for formal evaluation of the 48th ARRSq into a principal focal point for:⁹⁴

1. Air Rescue/Recovery test and evaluation of equipment, techniques and tactics.
2. Integrated management scheduling and control of all ARRS ground and aircrew training as may be appropriately assigned this unit.

USAF had recognized the unique ARRS requirement for specialized

aircrew training and granted authority to establish individual schools as integral parts of the 48th ARRSq:⁹⁵

1. Under provisions of AFR 23-17, the HU-16 Ground School was established in 1960.
2. The Pararescue School was established to provide initial qualification in all types of ARRS aircraft.
3. CSAF Secret message, AFXOPFH 80193, 31 March 1966, established the HH-3CCTS.
4. CSAF Secret message, AFXOPF 75771, 14 June 1966, established the training requirements for the HH-53. This school was to include initial qualification as well as a CCTS.
5. CSAF Secret message, AFOAPDA 89827, 16 March 1966, validated the school requirement indicating that inasmuch as this organization (48th ARRSq) was the sole training agency for ARRS, it was imperative that additional training requirements be levied accordingly. Training was not conducted for each aircraft system in isolation, but as an integrated operational function requiring development of interrelated techniques and procedures. The 48th ARRSq was the only unit qualified to conduct such training. In view of the foregoing, USAF revised the ARRS mission directive to reflect that the Aerospace Rescue and Recovery Service would operate a specialized aircrew training school.

In order to maintain operational readiness of the Rescue and Recovery Force in SEA, it was essential to conduct tactical aircrew training for all aircrew members prior to overseas shipment. The training had to be accomplished outside of SEA due to the restrictions on flying training in the combat zone. During the interim, until the school proposal could be implemented, trained aircrew personnel had to be provided to ARRS SEA units. Therefore, Hq ARRS directed the 48th ARRSq to conduct a HH-3, HH-53, and HC-130H/P Tactical Aircrew Training Course on a temporary basis until final approval for the formal training unit was received. This would be in addition to the established HU-16 and Pararescue Technician School. In order to provide guidance for the unit to fulfill the various training objectives, the training portions of ARRS Programming Plans 580, 582, and 583 were combined into one directive, "Tactical Aircrew Training Plan for the 48th ARRSq, Eglin AFB, Florida."⁹⁶

During October 1966, Headquarters ARRS prepared a proposed Program Action Directive (PAD), "Realignment and Expansion of the 48th ARRSq Mission." A document entitled "Mission Support Requirements of the 48th ARRSq" was developed in July 1966 and was utilized for the basic guidance and conceptual approach in the preparation of the PAD. The PAD included the actions that were in progress to prepare the 48th ARRSq for its full CCTS responsibilities and those future actions that were also required.

The 48th ARRSq was scheduled to have all of its CCTS sections in operation by 1 February 1967; to include adequate selective manning, minimum essential equipment and facilities required to perform the assigned tactical training, development/evaluation and limited operational missions.⁹⁷

Hq MAC published a PAD on 31 March 1967 to realign and expand the 48th ARRSq mission to establish a comprehensive combat crew training school, a concepts and techniques development/evaluation section, and limited preplanned operational capability. On 1 July 1967, 48th ARRSq was officially realigned as the Aerospace Rescue and Recovery Service training unit.⁹⁸

The 48th ARRSq had been continuously training aircrews and ground support personnel (HU-16) under the provisions of the Hq ARRS Tactical Crew Training Plan. The realignment and expansion of the unit did not affect this training program and the first class under the new concept commenced their training on 5 July 1967.⁹⁹ Tentative approval of the course curricula, training flow charts and class schedule was received on 7 August 1967 which allowed the 48th ARRSq to continue its training programs until minor changes could be incorporated.¹⁰⁰

A reduction of the overall manpower authorizations accompanied the realignment of the 48th ARRSq from an operational to a training unit.

On the basis of supplemental information submitted by Hq ARRS, USAF reinstated one officer and six airmen authorizations.¹⁰¹

The quality of the aircrews graduating from the 48th ARRSq had become a matter of concern to the 3d ARRGp. The following problems were cited as contributing to this condition:¹⁰²

. . . Hopefully, the picture is not as bad as indicated, but if so, it is largely the reflection of the growing pains resulting from the conversion of the 48th into a Specialized Aircrew Training School this past July. . . .

. . . the HH-53 is a new weapons system in the Air Force's inventory. Consequently, there was little operational experience from which to draw in the development of a training program. The HH-3 training program was adapted to the HH-53 and expanded to include basic aircraft transition training. It is now apparent that many of the original goals in the HH-53 program were optimistically ambitious. As the program progressed, some of these goals had to be tempered by experience and especially by equipment limitations.

The HH-53 training has been hampered from the outset by equipment problems, and it has continually been delayed by slippage in aircraft delivery. The maintenance support of these aircraft hasn't lived up to our expectations. The 48th has experienced an average OR of 45.7%, an average NORM of 29.2% and an average NORS of 25.1% from December 1966 through July 1967. These factors have had a most serious impact on the training program. When necessary, because of equipment malfunctions, training had to be simulated. As the reliability of the equipment increases, these deficiencies should decrease. Despite the

simulated training, all personnel depart the 48th ARRSq fully qualified in the aircraft, although lacking in some phases of system qualification. A variance in the actual flying time for maneuvers may exist, since all students are qualified on a proficiency basis.

In addition to the above problems, all of the training programs conducted by the 48th ARRSq were seriously degraded by the following factors:

1. Delay in approval of MAC PAD 68-7 by higher headquarters.
2. Insufficient lead-in time into the training environment.
3. The lack of a school secretary (director) to coordinate and supervise the training activities and disapproval of additional manpower spaces needed to run it properly.
4. The lack of academic instructors; the flight instructors must also prepare and present the ground school phases of instruction.
5. The lack of selective manning of the instructor personnel.
6. The lack of a stabilized tour for instructor personnel results in a continuous instructor upgrade program on top of everything else.
7. A lack of professional training aids and equipment. Actions have been taken or are underway to correct all of these deficiencies. However, they have had their effect on the quality of the training provided to the first few classes, and it must be realized that discrepancies may continue until some of these factors can be equitably resolved.

Some shortcomings noted in the air refueling training can be attributed to the last minute change in the concept of transporting the aircraft to Southeast Asia. Originally, the aircrews were to ferry the aircraft and thereby receive additional training in air refueling prior to their arrival in SEA. Familiarization training in air refueling is presented to all aircrew members. All pilots and flight engineers receive ground and flight training in the systems associated with air refueling.

Due to the limited capability of the 48th, in both airframes and personnel, it is impractical to fully qualify copilots to continue the mission to its completion when the RCC is incapacitated. Because of these limitations, it is only possible to provide the copilot with sufficient training to enable him to return the aircraft to a point of safe return.

We concur with many of the 3d Group's recommendations, but are simply unable to incorporate them into the training program at this time for the reasons listed above. Until more resources are made available, the Rescue Crew Commander training must be accomplished at the expense of the desired copilot program. . . .

.....

The first Hq ARRS/48th ARRSq training conference was conducted 2-4 October 1967. The purpose of the conference was to complete the pre-publication review of the course curriculum and to review the projected training requirements to be accomplished. The course curricula for the HH-3, HH-53, HC-130 and Pararescue/Recovery Specialist courses were approved. The HC-130 and HH-3 courses were lengthened to eight weeks and all of the aircrew course starting dates were synchronized with the

HH-53 curricula to afford greater efficiency in conducting the academic and flying phases of training.¹⁰³

Due to the growing concern in the 48th ARRSq's capability to accomplish its training objectives, Commander ARRS requested an evaluation of the unit's mission. The evaluation was conducted during 1 through 15 November 1967 with the following conclusions stated:¹⁰⁴

As a general assessment of the manner in which the mission is being accomplished, I would state that in view of limitations on aircraft equipment, facilities and personnel, the squadron is seriously restricted in carrying out the mission to the degree desired. Even though the squadron personnel are faced with many handicaps, everyone is working hard, a good and positive attitude exists throughout and an extensive effort is being made to make improvements within their capability. . . .

Several of the areas requiring attention to improve the unit's effectiveness were cited as follows:¹⁰⁵

1. Organization.
2. Manning.
3. Facilities.
4. Selection of key personnel.
5. Instructor qualifications.

The requirement to provide high altitude training to HH-3 aircrews

presented a problem. The ARRS HH-3 resources, which could be made available to the 48th ARRSq, were evaluated. The HH-3's authorized in the Unit Manning Document was the minimum force required to support the approved HH-3 Specialized Aircrew Training Course. The assumption of the helicopter mountain training requirement by the 48th ARRSq, with their available resources, would have overtaxed an already strained situation.¹⁰⁶

The courses of action, suggested by Hq MAC, to improve the HH-3 aircrew training capability were answered in November 1967:¹⁰⁷

The retention of the CH-3C, on loan from Det 15, EARRC, may be necessary, as an interim measure, until the validated airframes are provided to the SATS. Latest information indicates that the first HH-3E aircraft that could be diverted to the 48th ARRSq will not be available before February 1968. . . . The limited utilization of the CH-3C in performing the full spectrum of training exercises make retention of this aircraft for training purposes highly undesirable. . . .

The transfer of the aircrews, support personnel, and allocated flying hours for the CH-3C from Det 15, EARRC to the 48th ARRSq is not feasible. The increasing NASA and Eastern Test Range support requirements dictate the return of the CH-3C to Det 15 soonest. . . .

Although the student could accomplish some of the training requirements enroute to the mountain training site, the benefit derived from the training

accomplished during this transit time would not be of sufficient significance to warrant the reduction of the transit time from other areas of the course curriculum. . . . The mountainous training flight requirement must be considered as an additive to the flying hours stipulated in the currently approved H-3 course curriculum.

The present H-3 class duration will be extended by one week as suggested. Slippage in the mountain training may be expected. The weather conditions are far from ideal, especially during the spring, and additional time should be provided for rescheduling The present HH-3 resources of the 48th ARRSq SATS cannot accommodate the mountain training requirement and the currently approved H-3 course curriculum simultaneously. Additional training days and flying training hours for the H-3 helicopter mountain training have been integrated into the FY 69 H-3 course curricula.

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The H-3 aircrew training conducted by the 48th ARRSq requires that six fully ARRS HH-3E tactically configured aircraft be assigned to satisfy training requirements and provide a minimum of flexibility. Modification of existing CH-3C aircraft would not only be costly, but also time consuming. Neither of these factors enhance the value of transferring the CH-3C's to the 48th ARRSq. The most logical solution to the problem of improving the H-3 aircrew training capability of the 48th ARRSq SATS at the earliest date is to divert three HH-3E aircraft from the February to May 1968 production schedule. This action will afford the 48th ARRSq the capability to assume the H-3 helicopter mountain training requirement in April 1968 and return the CH-3C to Det 15, EARRC.

The second ARRS/48th ARRSq training conference was held on

18-19 January 1968. A total of 21 action items were identified, five of which had major impact on the ARRS training program:¹⁰⁸

1. HH-3 Helicopter Mountain Training
2. Instrument Training for Helicopter Pilots
3. HH-53 Helicopter Training
4. Squadron Reorganization
5. Maintenance Training for HH-53 Support Personnel

HH-3/53 training was addressed in Section VI E and VI H with the exception of instrument training. Since the inception of ARRS helicopter training programs a requirement for additional pilot instrument training has been evident. As a result of discussion on this subject during the January 1968 training conference, the course curricula was revised to include additional training.

In response to the action items dealing with squadron reorganization, Hq ARRS submitted the following to Hq MAC:¹⁰⁹

.....

Nearly two years ago we prepared a study on this subject, and submitted it to MAC on 4 April 1966. Our proposals were staffed and subsequently approved by both your headquarters and HQ USAF. At that point in time, the growing diversity of the mission and the rapid increase in requirements indicated a necessity for gaining additional operational experience before further

refinements could be made. Since then, there has been a continuing effort to identify and correct the matters requiring change or improvement.

The tap roots of all of the problems are basic manpower authorizations, organizational structure, and manning. The size, complexity, and mission of the 48th ARRSq warranted reorganization to a three squadron Training Group. This organization will provide the optimum structure in view of the type and number of aircraft assigned, personnel authorized, student load, and the wide variety of training required to support the world-wide mission. Although the Group organization is an immediate requirement, we propose to defer on this matter because of the present austere manpower environment. For the interim, we recommend a realignment of squadron functions, tailoring the unit along the lines of the proposed Group structure. The squadron organization will then readily lend itself for upgrading to the Group structure, and we will request a Training Group at a future date when the present very austere conditions no longer prevail.

.....

We have taken a close look at all other functions and activities world-wide to see if any could be curtailed or eliminated. Since we are clearly overextended in many areas, it is impossible to satisfy the requirements by internal realignment.

A staff study was prepared and submitted to Hq MAC. The ARRS objective was to make the 48th ARRSq the professional counterpart of the MAC Training Facility, 443d Military Airlift Wing. The 48th ARRSq would then be properly organized, manned and equipped to provide highly trained and standardized Rescue crews to effectively support the growing requirements.¹¹⁰

The third ARRS/48th ARRSq training conference was held on 19 March 1968. Many of the items discussed in the previous conferences were addressed for review and updating. Several new problem areas were identified concerning student deficiencies and subsystem qualification. However, these problems were minor in nature and did not have an appreciable impact on the effectiveness of aircrew training.¹¹¹

SECTION VI

FOOTNOTES

1. Ltr, Comdr ARS to Hq MATS, Subj: SA-16 School Establishment, undated, pp. 1-2.
2. MAC History (1959), Vol. I.
3. Ltr, Comdr ARS to Hq MATS, Subj: Study - Effect of Increase in Operational Flying on Mission Readiness, 17 July 1962, Attachment I, p. 14.
4. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated.
5. Ibid.
6. Ltr, USCG, Subj: Assignment of Air Force Instructors to U.S. Coast Guard Search and Rescue School, 25 Mar 1965, w/1st Ind (AFXOPH), 16 Apr 65.
7. Ltr, ARRS (ARODC) to Comdr ARRS, Subj: USCG Search and Rescue School, 23 May 1966.
8. Air University Designated Study No. 7, Vol. VII, Rescue, 15 June 1968, p. 2.
9. Ibid.
10. Msg, Hq PARRC 270243 Aug 64, Subj: PFARS-OP 26-H-12/For ARCVC.
11. ARRS Programming Plan 575, Basic Plan, 15 Dec 1965, p. 3.
12. Briefing, General Williams to General Estes, Subj: Standard ARS Briefing, 24 Jul 1964, p. 22.
13. Msg, Hq ARRS (ARODC) 293-6 30 Jul 64, Subj: Change Four to ARRS Programming Plan 563.
14. ARRS Programming Plan 563, Annex CHARLIE, Appendix I, April 1964, p. C-I-1.

(Section VI Footnotes - continued)

15. Ibid., Basic p. 3, Annex CHARLIE, Appendix I, p. C-I-1.
16. Ltr, Hq ARRS (ARXDC) to Hq ARRS (ARODC), Subj: Combat Rescue/Recovery Tactics, 13 Jul 1965, p. 1.
17. Ibid.
18. ARRS Programming Plan 568, Change I, Basic Plan, July 1965, p. 2.
19. Ibid.
20. Ibid., p. 1.
21. Project CHECO Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-66) Continuing Report, 24 Oct 1966, p. 26.
22. Ibid.
23. ARRS Programming Plan 568, Annex CHARLIE, Appendix I, Tab A, April 1965, p. C-I-A-1.
24. ARRS Programming Plan 568, op. cit., p. C-I-B-1.
25. Hq ARRS HH-3 Combat Crew Training Course, undated.
26. History, Hq ARS (Office of Information), Subj: Chronology of the Air Rescue Service (MATS) 1 July 1964-30 June 1965, Oct 65, p. 3.
27. ARRS Programming Plan 571, Basic Plan, Nov 1965, p. 2.
28. Ibid., Annex CHARLIE, Appendix II, pp. C-II-1 & C-II-2.
29. Msg, Hq ARRS (ARCCO) 50052 7 Feb 66, Subj: Meeting at Hq ATC Randolph AFB, pp. 1-3.
30. Ibid., p. 3.
31. Ibid., pp. 4-6.
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VII. MEDICAL FORCES

A. Initial Capabilities 1964

The potential for emergency medical treatment was inherent in basic rescue and recovery operation and became magnified when conducted in the combat environment. The Gulf of Tonkin incident in the summer of 1964 precipitated the TDY deployment of ARRS fixed-wing aircraft (HC-54 and HU-16) and crews, with pararescue teams, to the Republic of Vietnam and Thailand. Additionally, two HH-43B detachments were deployed TDY to Bien Hoa and Da Nang to provide Local Base Rescue/Aircrew Recovery operational support. Both rotary wing detachments deployed with firefighter and medical technician personnel furnished from home station resources.¹

In September 1964, two new rotary wing units were formed at Stead AFB, Nevada. Crew members were specifically trained in ACR/LBR procedures and deployed PCS in October as replacement units for those TDY detachments at Bien Hoa and Da Nang. These PCS units became operational in November 1964 and were each equipped with three HH-43F helicopters and a five man pararescue team. Firefighter and medical technician personnel were not assigned to these PCS units as the pararescuemen were trained and tasked to provide both firefighter and medical support.²

The units assigned to SEA were tasked to provide medical support for both LBR and ACR missions. They were also frequently tasked for air

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evacuation of the critically wounded, from outlying aid stations or dispensaries, to field hospitals or larger base hospitals. An extremely hazardous aspect of this air evacuation responsibility was the hoist extraction of dead or wounded combat ground forces from a remote battle area.³

At best, the initial SEA assigned pararescuemen were knowledgeable in advanced first aid and could render proper basic medical management to one or two survivors. They did not have the training to cope with mass casualty situations encountered in a combat environment and were weak in principles of triage. Medical training background of these pararescuemen had been limited to a four week medical course conducted by USAF Medical Service School. A few of the senior NCO's had Korean War experience and had received significant professionally supervised medical training. Knowing this deficiency in medical treatment capability, the unit pararescue NCOIC established a self developed medical training program to insure that his pararescuemen had the necessary medical proficiency to support the unit mission. Local base flight surgeons were requested to aid in this program and did provide some assistance. However, the magnitude of the work load of the flight surgeons precluded their availability when needed and the bulk of the training was conducted by the most medically experienced pararescueman on each team.⁴

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Firefighter and medical technician personnel proved to be less than desirable for the support of the ACR mission. They did not have the emergency medical treatment training background, motivation or physical condition for this type mission. The medical technicians were not proficient in the management of mass casualties or triage and firefighter personnel had only "buddy care" knowledge.

The medical kits and other items of medical equipment used by ARRS SEA units were selected by the senior Pararescue or Medical Technician of each unit. Medical standardization was nonexistent between units. Many of the medical items procured for use were of questionable value, but freely supplied from host base resources. In addition to a locally assembled medical kit, each helicopter usually carried 1000-2000cc of dextran, blankets, human remain bags, water, splints and a litter (straight pole, mountain or Stokes). The need for better medical training, a standardized medical kit, improved parenteral fluid sources and a new type rescue litter were apparent.⁵

B. 1965-31 March 1968

Re-establishment of the position for a medical officer authorization on the staff of Hq ARRS in January 1965 was the first step in restoration of some degree of professional medical supervision for the medical training and mission responsibilities of ARRS personnel. Unit detail listing

authorizations for a Captain AFSC 9356 and two SSgts AFSC A90150 and 90650 comprised the entire staff for this agency and, though inadequate to meet the responsibilities for ARRS world-wide medical supervision, it provided the basic essentials for development of a formal medical staff directorate.⁶

Repeated staff surveys and unsolicited field unit comments indicated that a generally disorganized medical training and equipment situation existed within ARRS. Verification of this significant problem was obtained in early March 1966 when the Medical Staff Officer critically evaluated the capability of pararescue teams of the 31st and 79th ARRSqs and directly observed gross inadequacy in the medical equipment and supplies used by pararescue personnel of Det 7, 38th ARRSq at Da Nang. Correspondence directed to Hq ARRS through the 3d ARRGp from ARRS units within RVN and Thailand described major deficiencies in medical knowledge and skills of newly assigned pararescue personnel.⁷

In April 1966, a four phase plan was developed and implemented to provide comprehensive improvement in both medical training and supplies/equipment available for ARRS pararescue use:⁸

1. First, a medical training curriculum emphasizing life sustaining emergency treatment procedures and initial care of the severely injured was completed and incorporated in ARRS Manual 55-1 as an annual pararescue training requirement. Academic and practical aspects of the

program were to be accomplished under the direction of local flight surgeons supporting ARRS Squadrons and Detachments.

2. Second, this training curriculum was presented to each graduating class of the Pararescue Transition School, most of whom were designated for SEA assignment.

3. The third phase of this plan centered on a mobile training team type effort directed to all pararescue and medical technician personnel already performing duty with SEA ARRS units. This training was to be conducted on location by the Hq ARRS Medical Staff Officer and a highly knowledgeable pararescue assistant.

4. The final phase of the plan was directed to the revision of the curriculum for the four week initial medical course, ALR 92170-1, Rescue and Survival Technician - Medical, conducted by ATC. This curriculum revision was developed to provide basic background information in anatomy, physiology, medical terminology and first aid procedures. Ideally, this course would serve as the initial step in a complementary progression of medical education throughout the development of the pararescue-man.

The need for standardization of medical supplies/equipment and consolidation of a suitable assortment/quantity of these items into one kit specifically designed for medical support of the ARRS mission was also

evident. A prototype pararescue medical/jump kit was developed in May of 1966 by the ARRS medical staff, but direction for acquisition of this kit was withheld pending completion of the programmed medical training and staff visit to all ARRS SEA units. It was hoped that direct assessment of medical requirements of the combat rescue mission would provide additional guidance for final design and contents of the kit.⁹

During August-October 1966, the ARRS Medical Staff Officer, and a combat experienced senior pararescue NCO, visited all ARRS SEA units. The visit served to accomplish medical training and medical treatment proficiency development for pararescue and medical technician helicopter crew members. As a result of mission observation and participation, a concept for design and contents of a helicopter emergency medical treatment kit was developed. The medical treatment requirements of the helicopter oriented combat rescue mission were distinct from those of parachute deployed medical aid missions. Many of the items in the newly standardized pararescue medical/jump kit were not required for SAR mission support.¹⁰

Assessment of the environmental conditions affecting ARRS helicopter crew members performing recurrent duty at forward operating locations identified major deficiencies in field sanitation and personal hygiene knowledge possessed by these ARRS aircrew and support personnel.

Most were improperly trained and equipped to live under primitive field conditions. The flight medical officer, newly assigned to the 3d ARRGp, was informed of this deficiency which had fostered both morbidity and mortality from disease in several ARRS aircrew members. He was instructed to attempt to develop and supervise a minimum training program in field sanitation for ARRS SEA personnel. Additionally, he was tasked to continue coordination efforts with various U. S. Army Medical units to permit medical training of pararescuemen at Army casualty receiving stations.

The medical officer initially assigned to the 3d ARRGp in July 1965, as well as the medical officer currently assigned were both new to the USAF and totally unfamiliar with ARRS and pararescue medical mission requirements. They were less than adequately equipped to provide medical staff guidance for combat rescue personnel. The ultimate usefulness of medical staff personnel with this experience level was subsequently questioned. It was ultimately determined that ARRS staff medical responsibilities in SEA could be adequately met through TDY visits by the staff medical officer of Hq ARRS.¹¹

In early 1967, the position of Hq ARRS Aerospace Medical Staff Officer was redesignated as Staff Surgeon and the requirement for a SMSgt AFSC A92390 was validated and deficit listed as an additive for this medical

staff agency. This position was immediately manned against the validated deficit with a combat experienced pararescue NCO. As Chief of the Pararescue Medical Division, this NCO was tasked to provide detailed combat pararescue knowledge and experience for the Staff Surgeon.¹²

The design and contents list for a standardized medical kit specifically developed for use on all ARRS helicopters was formulated in March of 1967. This medical kit was subsequently approved by the Command Surgeon, MAC, the USAF School of Aerospace Medicine and the Office of the Surgeon General, USAF. The kit was designated Medical Instrument and Supply Set, Aeromedical and Recovery Team, Lightweight, and federally stock listed. Sixty-five kits were ultimately made available for ARRS units in SEA in September 1968.

The medical equipment and supply deficiencies previously noted were met on an interim basis through the acquisition of components for approximately 100 pararescue medical/jump kits. These components underwent priority air distribution to ARRS SEA units in February 1967 and served to support the mission until replaced by the standardized helicopter medical kit. Acquisition of additional medical supplies and equipment, as required by mission usage, was secured by 3d ARRGp through formal medical supply support agreements with 7th Air Force and 13th AF.¹³

In March 1967, a re-evaluation of the emergency medical treatment training provided pararescuemen, and field living instruction afforded other ARRS aircrew members, indicated additional improvement was required. Host base medical personnel could not be depended upon to provide the direct professional supervision of the pararescue medical training program. Field living training for aircrew personnel had been nonexistent, though it was a General Military Training (GMT) requirement supposedly provided by the host base.¹⁴

Instructor pararescue personnel at the 48th ARRSq lacked sufficient medical knowledge to adequately provide the necessary medical training. After a review of medical manpower authorizations within ARRS and discussions with the PARRC Commander and the 3d ARRGp Commander it was decided that the medical officer authorization allocated to the 3d ARRGp should be withdrawn and applied, with modification, to the 48th ARRSq. The primary level of medical treatment instruction required for pararescue personnel was within the scope of knowledge of a nurse anesthetist, flight nurse qualified. Therefore, the medical officer authorization was converted to an anesthetist qualified flight nurse AFSC 9765. This individual together with an administrative assistant and two pararescue instructors from the staff of the Pararescue Recovery Specialist School formed the nucleus of the medical instructor staff for the 48th ARRSq.¹⁵

In October 1967, construction of a field living training area was completed at Eglin to provide field living instruction for all ARRS aircrew personnel attending the Specialized Aircrew Training School. In January 1968, an animal emergency medical treatment training laboratory became operational at Eglin AFB, Florida. This laboratory served to develop pararescue student proficiency in emergency medical treatment. It was subsequently expanded through the development of a variety of course curricula to provide several levels of instruction and proficiency development. The knowledge and experience gained from attending this animal laboratory program, which was further complemented by situation type medical problem training, became the single most important accomplishment in development of an acceptable medical training program for pararescue. It provided the confidence and skill necessary to meet the medical treatment responsibilities inherent in any combat rescue and recovery mission.¹⁶

In March 1968, realistic manning for the Office of the Staff Surgeon, ARRS was validated and approved pending availability of manpower resources. The grade structure and manning authorizations approved under this action were adequate to provide the necessary supervisory direction for medical technician and pararescue personnel supporting both the combat and noncombat ARRS missions.¹⁷

SECTION VII

FOOTNOTES

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3. Project CHECO Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-66) Continuing Report, 24 Oct 1966, pp. 66-69.
4. Ltr, Hq ARRS (ARASG) to Lt Col Gordon W. Crozier, Subj: Medical Aspects of the Aerospace Rescue and Recovery Service in Southeast Asia (1964-1968), 30 Dec 1968, p. 2.
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VIII. SAFETY

A. Safety Manning and Mishap Reporting

There was no established primary duty safety function in SEA until March 1966. Consequently, there was a prolonged period during which ARRS was involved in the hostilities, but did not have the benefit of a qualified Safety Officer. Also, experienced safety coverage was lost during the three months between arrival and departure of Safety Officers; plus the loss of effectiveness during the period of time required for self-indoctrination.

It was evident, through safety surveys, that a Safety Officer should have been assigned early in the conflict. Because of this deficiency in manning, it was doubtful all aircraft incidents were, in fact, reported. Those that were reported, were submitted either through the home units of TDY crews or through operating base channels. Therefore, it was virtually impossible to consolidate information or establish trends regarding safety experience in the early phases of the conflict. It was conceivable that incidents investigated, reported, and corrected, subsequent to the assignment of a Safety Officer, also occurred earlier but went uncorrected due to the lack of qualified personnel. The lack of publications, forms and procedures for prompt reporting of mishaps contributed in part to this undesirable situation.¹

Since the safety function was established long after the start of SAR operations in SEA, much of the time and effort during the first few months was expended in putting out fires and responding to emergency conditions throughout the system. As procedures and controls were established, the safety staff became more effective in performing the supervisory functions and furnishing the necessary assistance to the subordinate units.²

B. Operational Capability

Several safety aspects impacted on operational capability. Although each unit was confronted with some unique hazardous conditions, there were many which were common to all.

Units were required to fly helicopters from congested areas where vehicles and personnel traffic posed a serious threat to safety.³ Once airborne the problem was further compounded due to dense air traffic in the immediate vicinity of the air bases and the lack of an adequate air traffic control capability.⁴

The SAR mission required flight in both visual/instrument meteorological conditions (VMC/IMC). The lack of adequate instruments and navigation systems on helicopters aggravated the already jeopardous combat recovery operation.⁵

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Another operational problem was that HC-130 units were required to maintain a surface-to-air recovery capability which necessitated storage and maintenance of modules, kits and support equipment. The flight crews were required to maintain currency in the system which necessitated TDY to Japan or Iwo Jima. Maintaining this capability required additional flying hours for already overtaxed aircrews, additional aircraft flying hours and necessary maintenance support. Severe limitations were imposed on the surface-to-air recovery technique by the time required for the downed pilot to erect the ground station; compromise of the downed crewman's position due to the large balloon utilized in the recovery and the prolonged vulnerability of the low flying HC-130.⁶ These limitations were recognized and it was not envisioned that this capability would ever be used in SEA, therefore, the currency requirement was questioned.⁷

C. Training and Personnel

Safety problems in the personnel and training area were found to fall primarily within four categories:

1. Personnel shortages.
2. Low skill personnel.
3. Disproportionate crew ratios.
4. Lack of SAR training for tactical aircrews.

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ARRS personnel in the CONUS did not provide sufficient indepth resources to sustain manning requirements in SEA. This constant shortage of experienced personnel, particularly HH-43 mechanics and pilots, became a major problem in that it placed most of the heavy workload on a few personnel.⁸

Many of the new pilots that arrived in SEA were not qualified for Rescue Crew Commander duty and had to be permanently assigned to copilot duties for their full tour. The impact of this factor on the morale of these young officers was understandably severe.⁹ This shortage of personnel and disproportionate manning resulted in excessive duty time for experienced personnel and posed two new problems to flying safety:¹⁰

1. Pilot fatigue.
2. Supervision problems.

Excessive duty time caused pilot fatigue, an obvious hazard. The 60-hour duty week for HH-43 pilots imposed by ARRS Manual 55-1 was a realistic limit. Pilots consistently had to exceed that limit, on waiver, to provide mission capability.

Pilot shortages made supervision of the detachment difficult. The Detachment Commander was required to pull alert duty equally with the other pilots. The Commander then had too little contact with the personnel

responsible for the various functions of the unit.

In other units the problem was reversed. In December 1966 the paramount HH-3E accident potential was lack of pilot proficiency. With only two aircraft operational at any one time and a mission requirement of two aircraft at forward operating locations during daylight hours, it was impossible to maintain a high state of qualification for the 29 assigned pilots.¹¹

An accident which occurred in December 1967 resulted in the loss of a would-be survivor. The cause of the accident was personnel error on the part of the survivor in that he reached up to help himself puncturing his life vest on the sump drain of the HH-3E. As a result he slipped from the rescue sling and fell into the water and disappeared. This accident emphasized the need for combat crews to receive actual training in recovery by helicopter. The possibility of injury to the survivor or damage to his equipment by aircraft structure would be discovered under controlled conditions.¹²

D. Materiel

After assignment of a qualified Safety Officer, and establishment of normal safety channels, several Incident and Operational Hazard Reports were received which reflected materiel deficiencies.¹³ It was reasonably

concluded that similar deficiencies were experienced earlier, but due to inadequate emphasis, never entered the reporting system.

The "King Arthur" torso armor accompanied the HH-3E when it was introduced into SEA, however, when the HH-53's arrived this equipment was not available to the crew members.¹⁴

Another area of concern was the lack of protection from the elements for ARRS helicopters. The rotor heads, control rods and cables, and similar critical components were more exposed than on a fixed-wing aircraft; therefore, were more susceptible to wear and corrosion associated with rain, damp weather, blowing sand, etc. This resulted in increased maintenance to keep the aircraft in acceptable condition.¹⁵

SECTION VIII

FOOTNOTES

1. Report, Hq ARRS (PRNOS), Subj: Accident Prevention Survey (Explosive Operations) 7-9 Dec 1967.
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3. Ltr, 38 ARRSq (38 BR) to Comdr 38 ARRSq, Subj: Aircraft Accident Prevention, 5 Jan 1967, p. 1.
4. Ltr, Det 9/38 ARRSq (38-9CO/Capt Tyree) to Comdr 38 ARRSq, Subj: Aircraft Accident Prevention, 3 Jan 1967, pp. 1-2.
5. Ibid., p. 1.
6. Project CHECO Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-66) Continuing Report, 24 Oct 1966, p. 75.
7. Ltr, Hq ARRS (ARIOS) to Hq ARRS (ARCCO), Subj: Trip Report, 23 Oct 1967, p. 7.
8. Ltr, Det 12/38 ARRSq (Maj Bush) to Comdr 38 ARRSq, Subj: Flying Safety Hazards, 31 Dec 1966, p. 1.
9. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Aircraft Accident Prevention, 9 Jan 1967, p. 1.
10. Ltr, Det 9/38 ARRSq (38-9CO/Capt Tyree), op. cit., pp. 2-3.
11. Msg, Det 7/38 ARRS 00637 Dec 66, Subj: Lack of Proficiency, pp. 1-4.
12. Report, Hq PAC ARRC, Subj: USAF Accident/Incident Report, 27 December 1967.
13. Msg, Det 2/37 ARRSq 080811Z Jan 68, Subj: Operational Hazard Report.
14. Ltr, Hq ARRS (ARIOS) 23 Oct 1967, op. cit., p. 4.
15. Ltr, Det 8/38 ARRSq to 3d ARRGp (GROS), Subj: Aircraft Accident Prevention, 3 Jan 1967, pp. 1-2.

IX. INFORMATION

A. Publicity

The growth of an ARRS Information program in its publicity aspects did not parallel the growth of rescue forces in SEA. From April 1962, through June 1964, the only unit in SEA was a Joint Search and Rescue Center, Detachment 3 of PARC. The detachment strength did not exceed twelve personnel during this period and as such did not warrant a formal Information program.

In June 1964, the build up of ARRS forces in Southeast Asia began. However, these forces were widely separated with few personnel assigned, and as such could not justify the assignment of an Information Officer. The Information program was to be accomplished on an additional duty basis. Personnel assigned to these units were not only required full time in support of the SAR mission, but deeply involved in self-help programs to improve their living conditions and operational capability. Throughout the remainder of 1964 and until mid-1965 little or no time or effort was directed to the establishment of a unit Information program.

Although the 38th ARS had been activated at Tan Son Nhut on 1 July 1965 research of available documentation provided no evidence of a formal Information program. Publicity generated by the unit was handled by local Base Information personnel.¹

Provision for the first professionally directed ARRS Information program in SEA occurred with activation of the 3d ARRGp at Tan Son Nhut on 8 January 1966. The initial Unit Manning Document for the 3d Group included a position for a major, who was to be the first full-time Information officer.²

As this position was not filled for several months Information program was conducted as an additional duty. This situation was far from satisfactory as reflected in a report from the 3d Group commander.³

I wish we had that primary duty IO to take the load off others who have plenty to do in their own field, but so far we have nothing on arrival. When the MAC IO was out here in January, I thought we would have someone within 30 days.

His desire for a full-time IO was not satisfied until some time in the late summer.

Acting as a bridge between ARRS units in the field and Information representatives at 7th AF and MACV, the 3d Group IO began getting more exposure for the command in both internal and external media. His efforts were effective, however, the very nature of the command, i.e., small units at widely scattered locations, made the Information task virtually impossible for one man to accomplish. This continued as the major problem, requiring resolution before a more

effective program could be established. Had manpower and equipment been provided for a fully-staffed, qualified Information office for 3d ARRGp, many problems would not have occurred. The limited scope of the program was indicated when the IO reported that only 11 releases had been forwarded for clearance in a one month period. Circumstances, therefore, caused the main thrust of the Information program to lay with the additional duty IOs in the squadrons and detachments, who were forced, through inexperience, to work through their local base Information officers.⁴

Although they often obtained results the opposite was more often the case. The combat mission had to take priority; there was no time for tasks which did not contribute to the combat effort.

By the end of June 1968 the Information program at 3d Group was only partially successful. The command was getting much favorable publicity and widespread recognition, however, there was much more which could have been done.

B. Historical Program

Basically the same situation existed in the conduct of the Historical program. This program was not started until the 38th ARRSq was activated in July 1965. This unit forwarded its own histories until organization of the 3d Group and 37th ARRSq on 8 January 1966. At that

time, 3d Group began forwarding consolidated histories in an effort to relieve the subordinate units of some administrative workload. This system apparently did not work as separate unit submissions were resumed in April 1967. When the 39th ARRSq was activated in January 1967, their first report was sent directly to Hq ARRS, as was the first report for the 40th ARRSq which was activated in March 1968.

Since the beginning of the 3d Group's historical program, there has been steady improvement in the quality of the reports. There was, and still is, a lack of detailed information required to provide a comprehensive record of the Group and its units. This inadequacy stemmed from inexperience of personnel who were given the responsibility for the Historical program for a relatively short period of time prior to rotation. These additional duty historians, who were not previously qualified failed to realize the importance of documenting the ARRS SEA effort. As a result much valuable detail was lost. Another detrimental practice was the "sanitizing" of histories, i.e., excluding classified information which would have provided a more accurate picture of unit activities. The net result was a lessening of the research value of these histories.⁵

SECTION IX

FOOTNOTES

1. Genealogy, Hq ARRS (ARFOI-H), Subj: Genealogy Aerospace Rescue and Recovery Service, 1 January 1962-31 December 1962, Extract July-December 1965, p. 8.
2. Document, Hq MAC, Subj: Unit Manning Document Part II - Authorizations, 1 May 1966, p. 1.
3. Ltr, 3d ARRGp (RGCO/Beall/4313) to Comdr ARRS, Subj: Commander's Letter, 4 June 1966, p. 4.
4. Ltr, Hq 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 10 July 1967, p. 4.
5. Statement, by W. E. Alford, Hq ARRS Historian, Subj: Historical Program, undated.

X. PARARESCUE

A. History

The pararescue capability had its origin in the China, Burma, India theater during World War II. A doctor and two medical technicians volunteered to parachute to an aircraft which had gone down with several prominent personnel aboard, some of whom possessed highly classified information. The "paramedic" team saved seven lives and provided protection for the 30 days it took the party to walk out of the jungle. Their leader, Dr. Don Fleckinger, and others, saw the new concept and championed the need for medical rescue teams. Within a year of the establishment of Air Rescue Service, formal training was begun for "paramedics". Personnel were selected, trained and accurate parachuting procedures were developed which augmented other rescue capabilities.¹ However, when the austerity of the late fifties caused cutbacks in Rescue resources, some of the "paramedic" teams were disbanded while others were developed into "land rescue teams" assigned to units outside of Rescue. During this early period there was little correlation between the paramedics and specific aircraft, or numbers of aircraft. Paramedic teams responded to any need for help and would deploy from virtually any available aircraft or search for and penetrate the crash site on foot. During the Korean Conflict, paramedics were utilized on all recovery helicopters. This was the first combat validation of the Paramedic concept.

After the Korean War, austerity paired the Air Rescue force, including the Paramedic teams. This capability disintegrated due to this austerity resulting in personnel changing career fields or retiring. At that time the Air Force Specialty (AFS) 921 was titled "Rescue and Survival" and was included within the 92 career field which reflected its medical background. A new AFS (922) was created to provide personnel trained to maintain aircrew survival gear and capable of training aircrew personnel in the use of this equipment. The 921 AFS covered training in survival techniques and personnel qualified in this career field could perform rescues under some circumstances.

In early 1960, a tenuous bid was made by the Air Rescue Service to gain a place for USAF in the NASA Space Program. ARS pararescue personnel developed the technique of parachuting into the open sea with Self-Contained Underwater Breathing Apparatus (SCUBA). This capability enabled ARS to be designated as a part of the astronaut recovery task force covering the entire earth's surface between 40 degrees N. latitude and 40 degrees S. latitude with the exception of the small primary landing zones and certain land areas.

This beginning led to the highly effective Pararescue concepts in existence today, which no doubt, enabled the combat ACR system to

achieve the high success rate experienced in SEA. It was recognized that there was a need for a human link between the rescue aircraft and the survivor. Without this capability, the survivor would actually have to rescue himself. With a Pararescueman (PJ) available the survivor was normally assured of recovery, regardless of his ability to assist himself. In addition, the Pararescueman could administer emergency medical aid which would enhance the probability of survival of the rescuee. The Pararescueman provides the rescue/recovery system with the capability to physically secure, protect and retrieve a survivor.

B. Introduction of Forces

Prior to 1963, all ARS squadrons were authorized a block of spaces for pararescue personnel. However, the ARS operational concept included the Pararescueman as part of the primary tactical aircrew for all missions. Despite repeated requests to designate Pararescuemen as dedicated aircrew personnel, USAF resisted revision of the established HU-16, HC-54 and HH-43 aircrew composition. The ARS operational concept required a two-man pararescue team as the minimum required for SAR missions, due to the hazardous environment in which they lived. Therefore, in 1964 when the first TDY HU-16 entered SEA in support of YANKEE TEAM, the pararescue team was deployed as an integral part of the aircrew:²

During this period pararescuemen were deployed TDY to SEA in support of orbit or duckbutt missions as crew members on HU-16 aircraft. The concept of operations was identical to operations in any rescue effort in tropical areas with the additional task of providing survivor protection in a hostile environment and conducting escape and evasion survivor assistance to a secure area.

The initial HH-43 units were deployed TDY from PACAF bases and forward Provisional detachments in SEA. They had no assigned pararescuemen and were to utilize firefighters and medical technicians from the host base. In those instances where ARS units deployed to locations that did not have a firefighting or medical capability, these personnel then had to be withdrawn from PACAF bases. When the first PCS LBR detachments were deployed to SEA, the firefighters and medical technicians likewise had to be obtained from resources outside of MATS/ARS. Withdrawal of these non-ARS personnel required resolution and direction by USAF, against the strong objections of the losing commands. The LBR program was conceived and developed as an austere program to replace the many helicopters and helicopter sections maintained by most Air Force Bases around the world. This severely defined and limited concept was stated in AFR 55-18 and required ARS to utilize base-assigned firefighters and medical technicians. Category II/III (HH-43) testing accomplished by ARS clearly demonstrated the critical need for professionally trained rescue

crewmembers. The utilization of host base firefighters and aero-medical specialists did not provide the LBR units with the trained personnel required to perform the vital life saving mission. Their basic professional training was inadequate in scope to that required for a professional rescue force. The mission of ARS, particularly in combat, required a continuous training program utilizing the most highly trained personnel available. The concept of utilizing host base firefighters and medical personnel was rebutted by ARS during the Category III test program and has been the subject of biannual reclama actions.³

USAF Manpower (AFOMO) maintained that no firefighter or medical technician manpower was validated or authorized for the prosecution of the LBR mission. AFR 55-18, however, requires the LBR's host base to provide the firefighter and medical manpower. It was stated that manpower allocations were not available to effect a change to AFM 172-3. Manpower availability is a function of operational priorities. It was further stated that no non-rated (excluding flight engineers) manpower allocations were justified for the support of LBR flight operations and, therefore, were not available for conversion to AFS 921 spaces to satisfy the AFM 172-3 change. The absence of validated allocations was fallacious rationale in this case since AF regulations and established priorities require a man-hour expenditure as HH-43 aircrew members.

Operations under AFR 55-18 required performance of duties by two fire-fighters and one aero-medical technician. The man-hours were, therefore, required and expended in support of LBR operations. Recognition of this manpower expenditure would be in consonance with Department of Air Force Manpower Doctrine and serve to identify allocations which should be converted to satisfy this change to AFM 172-3. Therefore, manpower was expended in accordance with authority, but its expenditure was not accounted. If manpower was not accounted, then there could be no transfer of existing spaces to add to the ARS LBR program; i.e., an impasse and no pararescue capability for the LBR.⁴

Additive manpower for ARS HH-43's could not be justified since, as previously pointed out, ARS did not have a wartime mission and without it a combat rescue capability was impossible to justify. Without a wartime or tactical mission, the need for mobility did not exist, and in theory, non-rated aircrew support from the host base should have been adequate for the performance of the mission.

C. Increasing Capability

In 1964, aircrew recovery forces were deployed to SEA:⁵

Pararescuemen were assigned to HH-43 units in RVN and tasked to perform duties as medical technicians and firefighters in selected units tasked with Aircrew Recovery and Local Base Rescue missions. They were employed

extensively in this capacity with great success. During this period, in addition to ACR and LBR missions, these HH-43 units were active in medical evacuation missions involving wounded and/or injured ground forces personnel. It was evident at this time, at the operating level, that the pararescueman who was firefighter qualified in addition to his many other skills was extremely well suited to this type operation.

Some of the detachments were designated as having a dual mission (LBR/ACR) while others had only an ACR or LBR mission.⁶ Pararescue spaces were allocated for those detachments with a designated ACR mission. Since the ARS pararescue resource was limited to block allocations which could not fluctuate with programming guide changes, the use of pararescue personnel in SEA initiated severe shortages of pararescue personnel world-wide. From that initial introduction the use of pararescue personnel has been more limited by manning availability than by authorizations.

Interim long-range recovery vehicles (HH-3E) for deep penetration missions were introduced in late 1965:⁷

During the latter part of 1965, the HH-3E was placed in the theater as a long-range ACR vehicle. This was to augment and eventually replace the HH-43 with the range extension tanks as the primary long-range ACR vehicle. The HH-3 utilized a pararescueman as a basic crew member and he was tasked to perform survivor retrieval by hoist when required, provide medical treatment, and provide defensive measures during long-range ACR missions over hostile territory. . . .

Significantly, this aircraft, although limited, had been procured,

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modified, and manned to perform the ACR mission with a Pararescueman as designated aircrew. Later to be armed with M-60 machine guns, this aircraft could extract USAF's most valuable and irreplaceable asset from deep inside enemy held territory. Survivability was programmed, and the pararescue capability enabled ARRS to recover personnel who could not assist themselves. Mission number 2-3-26 on 9 April 1967, illustrates several aspects of the need for physical assistance:⁸

. . . . Briefing confirmed a dornier (83 X) had crashed near 62A, two passengers in the crash had been picked up by a H-34. The pilot, badly injured, was tied to a tree near the crash. The H-34 was unable to pick him up due to injuries and terrain. . . . elevation 3,500 ft. MSL. . . . Due to the rugged terrain (approximately 45 degrees slope on the side of a box canyon) it was decided to put the P.J. from Jolly Green 55 on the ground to assist in preparing the survivor for the pick-up. Jolly Green 55 dropped its tip tanks and at 1350L lowered the P.J. to the ground. At 1410L Jolly Green 36 made another approach to the crash site and lowered the Stokes litter to the P.J.'s, then departed. All of the hovering was over a slash and burned area approximately 60 ft. from where the survivor was located. . . . P.J. 1 advised that it would take another person to drag the survivor into the clearing. The decision was made to lower P.J. 1 (JG 36) and the copilot of Jolly Green 36 to the ground. . . . At 1440L the survivor in the Stokes litter was dragged to the edge of the clearing, but due to exhaustion and slashed bamboo, the three personnel on the ground could not move the survivor far enough into the clearing for the pick-up. Jolly Green 36 was then hovered to the edge of the clearing toward the survivor, to a point where the rotor blades were hitting the small branches, but was still at least 15 ft. from having the hoist directly over the Stokes litter.

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The hoist cable was lowered to the ground and sufficient cable let out to reach the litter. The cable was attached to the litter and the hoist operator proceeded to bring in the cable, this action pulled the litter across the slashed bamboo to a point directly below the hoist. The movement of the litter across the slashed bamboo was guided by the three personnel on the ground. At 1447L, the survivor was hoisted aboard Jolly Green 36. . . . Jolly Green's 36 and 55 landed at Lima 54 at 1515L and the survivor was transferred to a caribou and air evacuated.

This mission required not only both Pararescumen, but a copilot as well in order to physically handle the survivor. Had hostile action been encountered, the long hover required and the absence of the copilot from his duty station probably could not have been risked. An example of a recovery made possible by the pararescue capability under hostile environment is found in the following Mission Narrative Report (2-3-078-8348, 12 December 1968):⁹

. . . . A Yellowbird aircraft (B 57) with a two-man crew and a Candlestick 44 (C-123) with a crew of seven were both down with only one survivor on his emergency radio talking to NAIL 36, ANO-2 working the area. . . . The area was known to be hostile and ground fire from 37mm and 23mm guns was attracted. . . . A smoke screen of white phosphorous bombs was laid down to the west of the survivor and Sandy 1 called for a Jolly Green at 0100Z. . . . Small arms fire was sighted by the Sandies and they delivered ordnance from their "Daisy Chain" position during the approach. At approximately 0110Z the rescue specialist was lowered to the survivor to disentangle him from the tree where he was suspended. Recovery was completed at 0115Z and Jolly Green 16 exited the area by reverse course.

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Mission Narrative Report (1-3-84 15 November 1966) dated 28

November 1966, illustrates the need for the flexibility and varied capabilities of the Pararescuemen: 10

. . . . A search pattern was begun and immediately an empty inflated life preserver was sighted. Continuing the search and approximately six minutes after arriving at the scene, a U. S. Navy sailor was located floating in his life preserver about one-half mile off the coast. He was in the surf with waves at least 12 feet high with gusty winds up to 35 knots, which made hovering exceedingly difficult. The sailor appeared lifeless, and it was decided he could only be recovered by lowering the pararescue specialist into the water. A Pararescueman was lowered on the hoist, attached the body to the "horse collar" and gave the signal to raise the cable. A few feet up, the body slipped from the harness and fell back into the waves. The body was again placed on the sling and this time the pararescue specialist affixed himself around the lifeless body to prevent it from again falling out. Both were raised into the helicopter, where artificial respiration on the sailor was attempted until it was definitely determined that no life existed. . . .

All ACR aircraft utilized in SEA prior to the HH-53 possessed a common failing; the inability to support adequate crew members and lift sufficient numbers of survivors. The ACR operational concept for pararescue utilization required a minimum of two-men. The HU-16 operated through 1964 and early 1965 with the two-man pararescue team. As enemy activity and aircraft losses increased the HU-16's were required to land in the Gulf of Tonkin more frequently to recover downed personnel. These

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hazardous tactical water operations demanded that the load be lightened to the greatest possible extent.¹¹

Pararescuemen continued to be utilized as crew members on HU-16 aircraft. As the level of conflict increased. . . . The decision was made to utilize (1) pararescueman as a water retrieval expert and to provide survivor care and medical treatment. The pararescuemen's water operating capability effectively reduced the exposure time to enemy fire during water landings and survivor pick-up. This concept continued until the HU-16 was phased out of the theater of operations.

HU-16, HH-43, and HH-3 aircraft were severely weight restricted when combat-configured, and particularly when operated over the mission profiles required in SEA.¹² Gross weight and mission profile restrictions were not unique; they should have been anticipated and provided for insofar as possible. The senior Pararescue NCOIC of 3d Group stated:¹³

The decision was made during the latter part of 1967 to no longer utilize two pararescuemen on the HH-3E in SEA, due to the critical weight factor affecting the hover capability of the aircraft. . . .

D. General Problem Areas

As previously mentioned, shortages of pararescue personnel during the buildup of forces in SEA caused unprogrammed expenditures in recruiting and training.¹⁴ The pararescue pipeline production time in 1964 was approximately 18 months from selection to duty with a field unit. The present pipeline is 12 to 13 months and no appreciable decrease in that

pipeline time can be expected. Deployment of the first pararescuemen with the LBR/ACR HH-43's depleted the world-wide pararescue resources. Extraordinary actions had been taken in 1964 to gain authority for increased training quotas in support of the ARS world-wide commitment in the HC-97 and HC-130 aircraft. The production of that 1964 buildup was fortunately available for deployment to SEA with the HH-3 in late 1965. The 1964 buildup did not realize its goal of satisfying the world-wide need for Pararescuemen and another increase in production began in late 1965. Training continued at a rapid pace throughout 1966, 1967, and the first half of 1968. The training program achieved a manning balance in 1968 and a small surplus of pararescuemen was created. This newly achieved world-wide balance in pararescue manning finally made possible the virtual elimination of the constant TDY of pararescue personnel into and within SEA. Heavy TDY's had been necessary since the initial introduction of ARRS forces in SEA.

Though several AFSC's have undesirable CONUS/overseas imbalances, the pararescue field has both a severe CONUS/overseas imbalance and SEA/CONUS imbalance. The total USAF assets (virtually all within ARRS) is approximately 300 personnel.

Overseas, non-SEA spaces are approximately 140, SEA spaces are approximately 85, with 95 spaces for the CONUS. The CONUS/overseas

imbalance was, therefore, approximately three to one with the CONUS/SEA ratio close to one to one. Four factors have made it possible to manage these critical imbalances:

1. Many pararescue personnel volunteer for extended, or return tours in SEA.
2. Consecutive oversea tour rates out of SEA were high.
3. Pararescue personnel volunteered at a high rate for tours into SEA from other oversea areas.
4. Twelve-month CONUS tours were accepted as a way of life by pararescuemen.

A persistent and frequently encountered problem in SEA was communications.

1. Since the Pararescueman can be on the ground and searching for the survivor, he must have a radio capable of communicating with the survivor as well as the aircraft. When ARRS forces originally deployed to SEA, they carried URC-59 transceivers (modified, 2-piece, URC-10's) which were tuned to 252.8 MHz.¹⁵ Mission communications, of necessity, were conducted on the frequency used by the survivor since the radio was the single most effective way of making physical contact with him. It was immediately apparent that the URC-59 was useless so these radios were "traded" for URC-10's, RT-10's, or whatever would operate on

243.0 MgHZ.

2. The early solution to the problem of "getting on the right frequency" proved to be less than the answer. Survival radios with built-in speakers/microphones were useless in the extreme noise environments of a hovering helicopter. Exercising "Yankee ingenuity" the Pararescuemen and SEA-based electronic technicians drilled holes in the cases of their survival radios, added a short piece of wire, and an AN/AIC-94A/U jack/switch and disconnected the internal speaker/microphone. Standard aircrew helmets with padded earphone and air-driven, noise cancelling AIC microphones could then be plugged into the survival radios allowing some degree of operation after descending a short way from the helicopter. This "unauthorized" equipment served until introduction of a manufactured version in May 1968. The manufactured version, the RT-60P was procured outside of normal AFSC/AFLC development/procurement procedures and is not found in USAF stock lists.¹⁶ The first modified radios were models for SEAOR FY-58-67. This SEAOR was so similar to an outstanding MATS/ARS QOR (pararescue transceiver helmet, April 1965), they were officially recognized as the same requirement.¹⁷ This requirement was answered by the PRC-87 which is now in OT&E. The first 3d Group Pararescue NCOIC stated:¹⁸

Communications has continued to be a problem throughout the entire period of operation in SEA. Of primary concern is the communications between the survivor and the rescue/search aircraft. With a single channel survival radio the frequency is cluttered and often disrupted by the homing signal or "beeper". Without positive communications between the survivor and the rescue aircraft the recovery effort becomes extremely difficult, if not impossible, in an area contested by unfriendly forces. The same problem occurs when the pararescueman departs the confines of the aircraft during a recovery effort and the radio becomes the only means of communication between the pararescueman and the rescue aircraft pilot. The RT-60P, two-channel radio provided to pararescuemen during 1968 has relieved the problem to some extent. A "quiet talk/receive" multi-channel, with hands-off operation radio is still an urgent requirement.

It should be pointed out that the Pararescueman, after descending 30 to 50 feet below the helicopter, could hear small arms fire that usually went undetected until the aircraft received hits.

E. Pararescue Training and Equipment

One consideration not previously mentioned, is the near legendary feats of the pararescue personnel in SEA. The record shows an amazing array of awards have been presented to pararescue personnel. This is all the more significant considering the group has never exceeded 100 personnel in SEA at any time. Of course, opportunity played a very large part. None the less, capacity to meet the challenge is implanted by specific design. Of these psychological requirements, the first 3d Group Pararescue NCOIC stated:¹⁹

All pararescuemen assigned to 3d ARRGp units are highly motivated and mentally oriented toward mission accomplishment. Their self-reliance is considerably greater than that of other airmen of similar military experience and age level. This apparently is a result of completion of the rigorous training they have accomplished. I believe that the Parachute School, SCUBA School and all other training they have received is an extremely important factor toward their preparation for performing the Rescue Mission in a combat environment. This training substitutes to a great extent for military experience.

The selection and training process was carefully developed to produce a man who was physically conditioned and psychologically prepared to place himself alone on the ground, in the heart of enemy held territory, to rescue a fellow human being. Each step and phase of the training program has a benefit and was designed to produce an individual who could be both a highly competent team member and a fully capable individual.

Performance in SEA fully validates the selection and training program utilized to qualify USAF pararescue personnel. Validity of the pararescue capability and concepts are recognized within ARRS. However, the full impact of these factors should be universally recognized. A capable tactical or combat Rescue force must include the ability to recover survivors without the assistance of the survivor himself. Regardless of the machines or the techniques, there is a need for a fully capable individual to physically secure a survivor and transition him into the security of the rescue vehicle.²⁰ Review of SEA missions discloses a high percentage

of survivors who were not able to assist themselves. Injuries, shock, fatigue and physical predicament, all conspire to limit the survivor's ability to properly use a rescue device lowered to him by a recovery aircraft. Often the survivor appears to be capable of assisting himself, but proves to be unable, by not getting on, or falling off of the rescue device. Just as the Rescue/Recovery mission requires survivable dedicated aircraft, it also requires the pararescue capability on all rescue aircrews.

Deficiencies in pararescue and recovery equipment were directly attributable to the recognition of the need for pararescue. As a designated aircrew member, all normal programming and support functions of USAF can respond to the peculiar needs of the Rescue/Recovery mission and the Pararescueman. As long as Combat Aircrew Recovery remains a part of the ARRS mission, equipment and concept development must be consistently upgraded in an orderly and timely manner.

SECTION X

FOOTNOTES

1. John L. Vandegrift, Jr. , A History of the Air Rescue Service (Rollins Press, 1959), Chapter 10.
2. Ltr, Hq PARRC (PROAS) to Hq ARRS (AROOPP), Subj: Corona Harvest Study (AROOPP Ltr, 15 Nov 68), 16 Jan 1969, p. 1.
3. Ltr, Hq ARRS (ARCCO) to Hq MAC (MAODC), Subj: Change to AFM 172-3 (HH-43) to Include Pararescue (A921XOB), 15 Feb 1967, pp. 1-3.
4. Ibid.
5. Ltr, Hq PARRC (PROAS) 16 Jan 1969, op. cit., p. 1.
6. Ibid., p. 2.
7. Ibid., pp. 1-2.
8. Ltr, 3d ARRGp (RGRC) to Hq ARRS (AROOPCR), Subj: Mission Narrative Report, 18 April 1967, w/l Attachment (Mission Narrative - Jolly Green's 36 and 55 - 9 April 1967), p. 1.
9. Ltr, 3d ARRGp (RCC) to Det 1 - 40 C, Subj: Mission Narrative Report (2-3-078-8348, 12 Dec 68), 15 Dec 68, p. 1.
10. Ltr, Det 7, 38th ARRS to 3d ARRGp, Subj: Mission Narrative Report 1-3-84 15 November 1966, 28 Nov 1966, pp. 1-2.
11. Ltr, Hq PARRC (PROAS), 16 Jan 1969, op. cit., pp. 1-2.
12. Ibid., pp. 3-4.
13. Ibid., p. 3.
14. Ibid., pp. 1-2.

(Section X Footnotes - continued)

15. Ltr, Hq MATS (MAMDC) to Hq USAF (AFSSS), Subj: Radios For ARS Pararescuemen, 17 Mar 1965, pp. 1-2.
16. Msg, 3d ARRGp 120700Z Nov 68, Subj: RT-60P Pararescue Transceiver.
17. Ltr, Hq 7AF (PLR) to Hq USAF (AFRDQR), Subj: SEAOR 58-FY-67 QOR (Pararescue Transceiver Helmet), 28 September 1966.
18. Ltr, Hq PARRC (PROAS) 16 Jan 1969, op. cit., p. 3.
19. Ltr, Hq 3d ARRGp (3 OASPJ) (SMSgt Hawkins) to Hq ARRS (AROASP) Subj: End of Tour Report (SMSgt Ted R. Hawkins), 2 June 1968, p. 6.
20. Ltr, Hq ARRS (ARCCO) to Hq MAC (MAODC), Subj: Pararescue Manning Requirement for HH-53, Revision to AFM 172-3, 13 Sep 1966, pp. 1-2.

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XI. 1967-31 MARCH 1968

A. Organization

From the standpoint of organization, there was still considerable change to the ARRS SEA posture during 1967-31 March 1968. For the most part this change related to redesignation and/or relocation of already established units. With respect to an increase in the organizational structure, two new squadrons and four new detachments were activated during this time frame.

Considerable correspondence generated over the ultimate organizational structure of the 3d ARRGp and the most effective and economical manner to beddown the assigned resources. Facilities and available real estate at bases throughout RVN and Thailand became a prime consideration as to how, when and where ARRS forces should be located and the organizational structure required to permit effective command and control. Firm military personnel ceilings established for South Vietnam and Thailand further compounded this problem.

Many proposals were submitted on the realignment of ARRS forces; each possessing some operational advantages but all confronted with major problems that precluded an early decision. As far back as 1965 it was proposed that Nakhon Phanom be converted to strictly a "recovery force base," with the HC-130's, one HH-3 unit and the A-1's assigned. A study

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was made of this and although the move would have had obvious operational advantages, it was concluded that logistically it was impractical and too costly to be feasible.¹

The 3d Gp commander desired that the HC-130's be located at Udorn as this base had already been designated as the Main Operating Base (MOB) for the 130's. He suggested that a total of nine HC-130's and no more be located in one squadron, at one location. His rationale for establishing the requirement for only nine aircraft was based on the fact that he did not believe that the surface-to-air recovery gear installed in the 130's would ever be used in North Vietnam. This reduced the mission for the HC-130 to that of providing tanker service for the HH-3's and providing a command and control aircraft for the prosecution of SAR missions. He thought that nine aircraft were sufficient to accomplish these mission objectives with backup from other PARRC units if required. DCS/Plans at Hq ARRS did not agree with the proposal to locate all of the HC-130's at one location. They felt that the 130's should be dispersed to be collocated with the HH-3's.²

The 3d Gp commander took exception to this rationale stating:³

. . . . The fact that all 130s would have a home base at Udorn would not mean that they would be operating from there at all times and I would certainly have them operating from other locations such as Da Nang, Pleiku, etc. Regarding the all-eggs-in-one-basket concept, I think it will be very seldom that they

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would all be at home station at any one time. I do not agree at all with the concept that they have to be with the HH-3's any more than SAC tankers have to be stationed with the fighter units they service. The tankers used over here now are stationed at Takhli and are fragged to be at the proper positions daily according to the strikes. I do not foresee the possibility of any bases being wiped out in Thailand at one-fell swoop in the foreseeable future unless an all-out war is declared and all of SEA blows up. If that happens the whole picture will certainly change and the entire concept of operational deployment will change with it. That is more reason for promoting the organizational concept I forwarded, and I really think the administrative problems built into the present organizational set-up are astronomical, and extremely inefficient. In any case I don't know where we will put any 130s at Da Nang, you've never seen such a crowded base with no parking or living space. . . .

The 3d ARRGp commander in late 1966 was quite adamant in his desire to separate the fixed-wing and the helicopters, rather than having them as an integrated unit. He felt the integrated unit had been the position of Rescue for years, and that it had always been a sore point with helicopter pilots. He wanted to see the helicopter pilots come into their own and for one time at least have helicopter units at squadron level. He had received the word that Hq MAC would only subscribe to three ARRS squadrons in SEA, rather than the four squadrons desired, as Hq MAC figured this would be all that HQ USAF would approve. His proposal under the three squadron concept was as follows:

1. One squadron consisting of HC-130's only.
2. One squadron composed of HH-3/53's with a detachment

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of HH-3's.

3. One squadron comprised of HU-16's would become an HH-3 squadron when the HU-16's phased out.

Under this concept the LBR's would come directly under 3d Group Headquarters.⁴

The four squadron concept was finally approved for ARRS forces in SEA and for the most part the organizational desires of the 3d Group Commander (1966 time period) were realized. As stated previously facilities, manpower ceilings and available real estate delayed organizational and realignment decisions. These limiting factors led to the activation and location of new squadrons and detachments, which would subsequently require redesignation and in some instances relocation in order to achieve the organizational structure desired.

This was certainly the case when the HC-130's were initially deployed to Udorn and Da Nang and subsequently consolidated as an HC-130 squadron at Tuy Hoa in May 1967. Similar problems were encountered in activating the HH-3E squadron at Da Nang and the HH-53 squadron at Udorn.

The ARRS commander in October 1967 requested that a fourth squadron be established at Udorn AB to function as the in-land, out-of-country command control organization for all heavy lift, long-range ACR helicopters

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(HH-3E/HH-53) assigned to Thailand. The unit responsible for this mission to this point in time was designated as Detachment 2 of the 37 ARRSq located at Da Nang. The span of control of this organizational structure was too extensive. The disparity in mission procedures and environment, in addition to the geographical separation of the Detachment from the parent unit, did not afford the 37th squadron the capability of providing an acceptable level of command control and supervision. With the programmed increase to 28 HH-3E/53 UE helicopters in the ARRS SEA ACR force, decentralization of the command structure was essential to afford the organization a span of control compatible to the operational environment. Although the 38 ARRSq provided effective command control and supervision of 14 Dets with 32 UE HH-43B/F throughout RVN and Thailand; an analytical parallel could not be constructed to identify compatible command control and supervisory requirements between the long-range SAR/ACR and the LBR/short range, with limited ACR mission responsibilities. This reorganization was approved, and afforded a more flexible and manageable HH-3E/53 command and supervisory structure commensurate with the SEA peculiar coordination and control environmental limitations. It provided the 37th squadron with an improved command control and supervisory capability for ACR coverage in the RVN and Gulf of Tonkin areas. The newly activated 40th squadron at Udorn had the same capability for ACR coverage in the Thailand, Laos and the NVN in-land, out-of-country areas of operations.⁵

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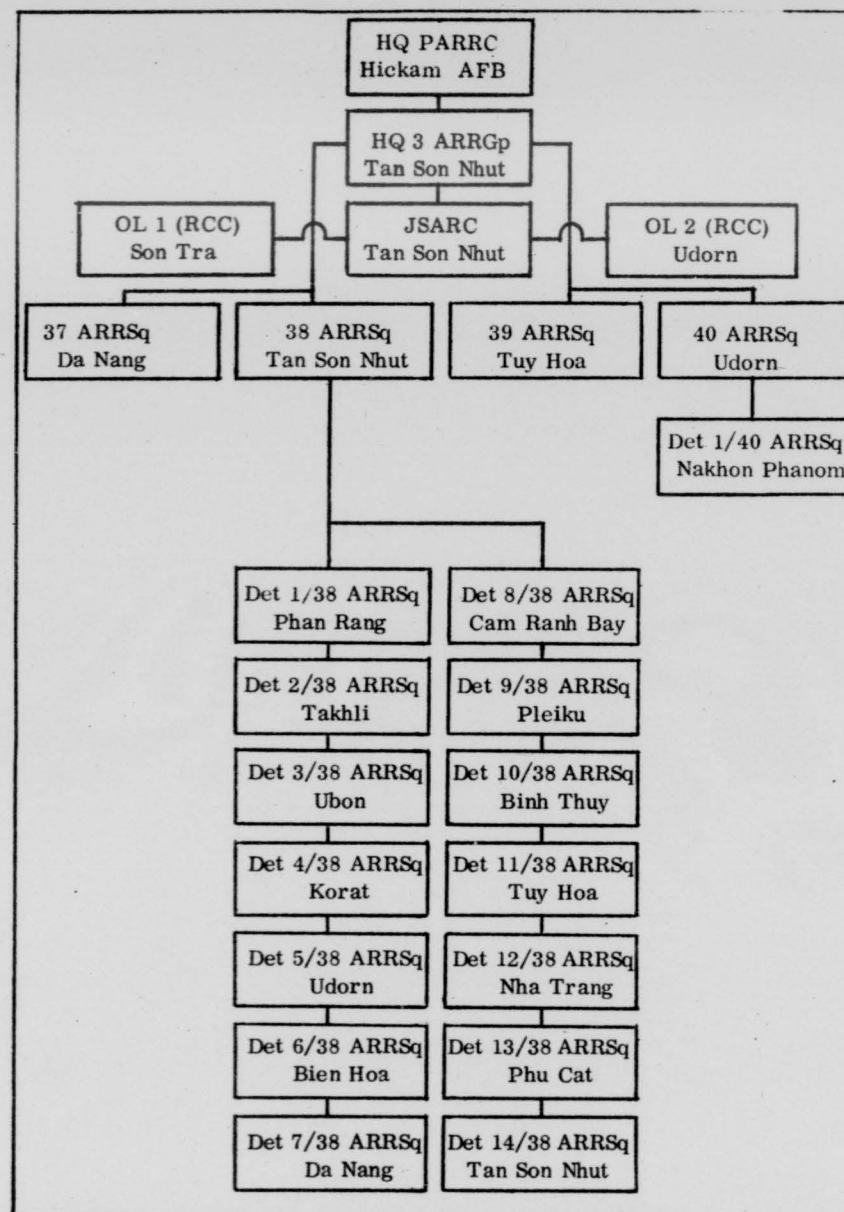
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In early 1967 a true SEA Joint Search and Rescue Center was about to become a reality. A proposed implementing directive was prepared by 7th AF and sent to both Army and Navy for coordination. Army concurred with the directive as written, however, the Commander, Naval Forces Vietnam (COMNAVFORV) did not and forwarded his proposed changes to Commander in Chief Pacific Fleet (CINCPACFLT) for coordination. CINCPACFLT concurred with these changes and authorized CINCPAC component commanders to agree and implement the final draft.⁶ In October 1967 an Army representative was assigned to the JSARC, however, as of 31 March 1968, the Navy had not as yet provided a representative. Naval representation was available by telephone contact with the Navy operations duty officer representing COMNAVFORV.⁷

The organizational structure that existed at the close out date of this report (31 March 1968) consisted of the 3d Group and the JSARC, four squadrons, fifteen detachments and two operating locations, which were the two sub-rescue control centers at Son Tra AB, RVN and Udorn AB, Thailand. (Ref Tab DD.)

To provide a thorough understanding of the considerable amount of change required to arrive at the 31 March 1968 organizational structure a complete recap of the organizational evolution was prepared. This graphic presentation quite clearly points out the impact that facilities, country

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Tab DD

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ceilings and available real estate, coupled with changing mission requirements, had on establishing the ARRS force in SEA. This related to 72 separate organizational actions that were required to activate 23 ARRS units in Southeast Asia. (Ref Tab EE.)

B. Operations

The tone of things to come with respect to SAR operations in SEA was emphasized in February 1967 by the 3d Group Commander:⁸

. . . Realistically, I am surprised that we have not lost more of our aircraft in SAR operations. Enemy defenses are growing stronger by the day; and it is my very grave responsibility to advise that we should anticipate more losses as the conflict progresses. Please be assured that we are studying tactics and employment of forces to counteract the enemy's increased capability wherever possible.

M-60 machine guns were installed in the HH-3 and efforts were underway to qualify the flight mechanics and pararescue personnel in the use of this weapon. The first air-to-air refuelable HH-3 had arrived in theater and plans were outlined to qualify aircrew personnel as soon as sufficient aircraft were available to conduct the training and still perform the mission.⁹

The moment most feared by any Rescue Commander occurred 14 January 1967 when SAR equipment failed during that crucial period, the actual pickup of the objective. During this mission a hoist failed on an AF UH-1F during a night recovery of a Navy A-4 pilot. The injured

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Tab EE

ORGANIZATION	▲ ACTIVATED				▼ DEACTIVATED				⊕ ACTIVATED/DEACTIVATED			
	FY 62				FY 63				FY 64			
	1	2	3	4	1	2	3	4	1	2	3	4
Hq PARC - Hickam AFB, Hawaii	▲											▼
RCC/JSARC - Tan Son Nhut, RVN		▲										▶
Det Prov 1st - Bien Hoa, RVN									▲	▼		
Det Prov 2nd - DaNang, RVN									▲	▼		
Det Prov 3rd - Nakhon Phanom, Thailand									▲	▼		
Det Prov 4th - Korat, Thailand									▲			▼
Det Prov 1st - Takhlil, Thailand									▲			▼
Det Prov 2nd - Nakhon Phanom, Thailand									▲			▼
Det 4 - Bien Hoa, RVN									▲			▼
Det 5 - DaNang, RVN									▲			▼
Det Prov 3rd - Udon, Thailand										▲	▼	
Det Prov 5th - Udorn, Thailand										▲	▼	
38 ARPSq - Tan Son Nhut, RVN										▲	▼	
Det 1 - Nakhon Phanom, Thailand										▲	▼	
Det 2 - Takhlil, Thailand										▲		▶
Det 3 - Udon, Thailand										▲		▶
Det 4 - Korat, Thailand										▲		▶

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Tab EE
(cont'd)

ORGANIZATION	▲ ACTIVATED				▼ DEACTIVATED				⊕ ACTIVATED/DEACTIVATED			
	FY 62				FY 63				FY 64			
	1	2	3	4	1	2	3	4	1	2	3	4
Det 5 - Udorn, Thailand												
Det 6 - Bien Hoa, RVN												
Det 7 - DaNang, RVN												
Det 9 - Pleiku, RVN												
Det 10 - Binh Thuy, RVN												
Det Prov 1st - Cam Ranh Bay, RVN												
HQ PARC to HQ PARRC - Hickam AFB												
HQ 3 ARRGp - Tan Son Nhut, RVN												
Det 1 - DaNang, RVN (Sub ROC)												
Det 2 - Udorn, Thailand (Sub ROC)												
37 ARRSq - DaNang, RVN												
Det 1 - Udorn, Thailand												
38 ARSg to 38 ARRSq - Tan Son Nhut, RVN												
Det 1 - Phan Rang, RVN												
Det 8 - Cam Ranh Bay, RVN												
Det 11 - Tuy Hoa, RVN												
Det 12 - Nha Trang, RVN												

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Tab EE
(cont'd)

ORGANIZATION	▲ ACTIVATED				▼ DEACTIVATED				⊕ ACTIVATED/DEACTIVATED			
	FY 62				FY 63				FY 64			
	1	2	3	4	1	2	3	4	1	2	3	4
OL-1 - DaNang, RVN (Sub RCC)												
OL-2 - Udorn, Thailand (Sub RCC)												
Det 2, 37 ARRSq - Udorn, Thailand												
39 ARRSq - Udorn, Thailand												
Det 1 - 39 ARRSq - DaNang, RVN												
OL-1 - San Tra, RVN (Sub RCC)												
Det 13, 38 ARRSq - Phu Cat, RVN												
39 ARRSq - Tuy Hoa, RVN												
Det 1, 39 ARRSq - Tuy Hoa, RVN												
Det 2, 39 ARRSq - Clark AB, Phil												
OL-1, 39 ARRSq - Udorn, Thailand												
Det 14, 38 ARRSq - Tan Son Nhut, RVN												
Det 1, 37 ARRSq - Nakhon Phanom, Thai												
40 ARRSq - Udorn, Thailand												
Det 1, 40 ARRSq - Nakhon Phanom, Thai												

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pilot was dropped into the dense foliage and never recovered. Occurrences of this nature would never be completely avoidable, particularly when using opportune forces utilizing equipment that was not designed for the SAR mission. The JSARC controllers must assume that the Commander of the agency providing opportune forces had designated qualified personnel with proper equipment to fulfill the requested mission. As a result of this incident the JSARC prepared a directive for 7th AF/MACV consideration directing commanders to assure that forces committed to a SAR effort were adequate to perform the mission.¹⁰

There was considerable concern over the phase-out of the HU-16 and the phase-in of the HH-3/HC-130 in the Gulf. The COMAC requested a briefing on the ARRS detailed plan for interim support of the HU-16 operation after April 1967. Factors prompting this action were:¹¹

1. Especially heavy loss of maintenance personnel.
2. HH-3E/HC-130 operational concept not yet service tested (no service test program written).
3. The aircrew training program had to be accomplished in country.
4. HU-16 operation must be continued on a TDY basis as long as necessary.
5. HU-16's would possibly be required during the winter months when bad weather over the Gulf might inhibit refueling.

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Aerial refueling of helicopters was a proven fact and would permit deeper penetration as well as operation at higher altitudes which was required for rescue recoveries. The capability was needed as early as possible, but the 3d Group Commander estimated that a fully operational status could not be attained before September 1967. It had also been resolved that the HH-3 would be completely compatible with the Navy ship-to-air refueling program known as project HIGH DRINK. This would provide an emergency refueling capability in the Gulf of Tonkin.¹²

Ground training for air refueling was conducted at Udorn beginning in May 1967 with the flying phase of training conducted at Da Nang. The training program was well prepared and well conducted, however, the training program was temporarily suspended pending a fix on the HC-130P hose/drogue connection. This condition was corrected and training resumed in June 1967.¹³ The HH-3 orbit mission in the Gulf of Tonkin was instituted on 21 June, and quickly accepted as routine missions.¹⁴

The 3d Group continually reviewed and evaluated potential tactic changes in an effort to improve the recovery rate. They coordinated with the Navy to determine the best tactics to permit penetration of the coast along the Gulf of Tonkin, since this was a highly defended area. Efforts were still underway to provide a night and low visibility capability in order to have access to highly defended areas under the cover of darkness.¹⁵

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The Commander 7th AF on 5 April 1967 requested a SAR concept of operations at night. The 3d Group Commander commented as follows:¹⁶

I have felt for some time that this request was inevitable. My staff is hard at work coming up with best possible operational ideas for this type operation. I have advised the 7th AF Commander that I will present our concept the first week in May. I feel sure our concept will merely firm up and standardize the procedures which have been in use for some time. Of course, any night operation will be evaluated on its own individual merits; and if the SAR effort can be put off til daylight without detrimental effect to the downed crewmembers, this will be done. . . .

The 3d Group Commander informed the Commander ARRS in a subsequent letter that "SAR forces can no longer claim general immunity from night operations by saying they are not fully equipped." There was no doubt in his mind that the Commander 7th AF would direct a night operation the next time the opportunity arose. A night ACR training program was initiated at Udorn. The overall procedures used were essentially the same as those developed by ARRS at Eglin AFB in early 1966. The primary purpose of the program was to familiarize HH-3 pilots with recovery operations in the fringe area of flare light. The program was closely monitored by 7th AF and the 7th Fleet. U.S. Navy personnel who had previously participated in a night recovery attempt in the Haiphong area participated in an advisory capacity during the entire program. Needless to say a "bona fide" night and low visibility recovery capability was not realized before the close out date of this report.¹⁷

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The MAC Commander made a visit to the 3d Group in March 1967. He was briefed on significant problems confronting the 3d Group; foremost was the lack of aircrew recovery helicopters. Due to slow delivery rates of the HH-3 and the loss of four in the theater, the 3d Group Commander was forced to seek release from the optimum frag positioning. Previously, he considered six helicopters necessary on the western border of NVN in order to provide minimum recovery effort, where as now he could only support four. He was also faced with the lack of RESCORT aircraft on the East coast. On numerous occasions the helicopters had to wait for the A-1E's to arrive for fire suppression, especially in the DMZ area. He believed that some SAR objectives had been lost due to these delays.¹⁸ The increased MIG threat, required the SAR task force to have a MIG Cap available before proceeding into NVN. Since MIG Caps were not fragged, some confusion existed during recent missions in obtaining sufficient aircraft. To overcome this, 3d Group requested the 7th AF Commander to provide fragged MIG Cap each day for SAR use. This was approved and considerably improved SAR force effectiveness in NVN missions.¹⁹

Medical evacuation, which was rightfully not a mission of ARRS, increased in scope toward the end of the period covered by this report. From 30 January to end February 1968, 1796 personnel had been airlifted by ARRS on medical evacuation missions from Da Nang. Of the total

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evacuated, 943 were accomplished by Jolly Green helicopters and the other 853 by HH-43's.²⁰

By 31 March 1968 ARRS had compiled a very impressive record of saves in SEA, totaling 1201 combat and 464 non-combat. This was not accomplished without loss of equipment and personnel. From June 1964 through 31 March 1968, ARRS lost the following aircraft as a result of SAR effort:

<u>Combat</u>		<u>Non-Combat</u>	
HH-43B	2	HU-16	2
HH-43F	5	HH-3E	2
HU-16	2		
CH-3C	1		
HH-3E	<u>5</u>		
TOTAL	15		<u>4</u>

This resulted in a loss of 27 ARRS personnel due to combat saves and 5 personnel due to non-combat recovery efforts.

Statistical data was compiled to show by mission/aircraft type, the number of aircraft required, versus the number programmed versus the actual number in SEA to support LBR and ACR mission requirements. This was further broken out to show by mission/aircraft type, those based in Thailand versus those based in Vietnam. This statistical information has been compiled by FY quarter and represents the total program for each mission/aircraft type through FY 4/68 or until phase-out of the aircraft.

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For example, six HH-43B's were required to support the ACR mission in Thailand in FY 4/64. Six were programmed, however, only two arrived in theater during FY 4/64. Attrition has also been shown, reflecting a loss of one HH-43B during FY 1/66. (Ref Tab FF.)

Statistical data on other mission aircraft can be found on the following tabs:

<u>Aircraft</u>	<u>Mission</u>	<u>Location</u>	<u>Tab</u>
HH-43B/F	ACR	RVN	GG
HH-43B/F	LBR	RVN/Thailand	HH
HC-54	Airborne Mission Control	Thailand	II
HU-16B	ACR	RVN	JJ
CH-3C/ HH-3E	ACR	Thailand	KK
HH-3E	ACR	RVN	LL
HH-53B/C	ACR	Thailand	MM
HC-130H/P	Airborne Mission Control	Thailand- 2/66-3/67 RVN-4/67-4/68	NN

C. Personnel

During early 1967, the newly assigned 3d Group commander identified the requirement for a Deputy/Vice commander who could relieve him of many of the responsibilities that only a commander or vice commander could satisfy. This would provide the commander with more time to view the overall picture and establish program objectives.²¹

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HARDWARE		TASK: TO PROVIDE ACR (Acft Based In Thailand)												SHRED-OUT: HH-43B							
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HH-43B	0	-	0	6	6	6	8	8	8	3	0	-	-	-	-	-	-	-	-	0
PROGRAMMED	HH-43B	0	-	0	6	6	6	8	8	8	3	0	-	-	-	-	-	-	-	-	0
ACTUAL	HH-43B	0	-	0	2	4	6	7	10	11	3	0	-	-	-	-	-	-	-	-	0
ATTRITION	HH-43B	0	-	-	-	-	-	-	0	1/B	0	-	-	-	-	-	-	-	-	-	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	0	13	25	32	38	50	56	14	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	0	9	19	26	31	41	50	13	0	-	-	-	-	-	-	-	-	0
ASSIGNED	AIRCREW	0	-	0	13	25	32	38	50	56	14	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	0	9	19	26	31	41	50	13	0	-	-	-	-	-	-	-	-	0
MANNING	AIRCREW	0	-	0	100	100	100	100	100	100	100	0	-	-	-	-	-	-	-	-	0
RATIO -	SUPPORT	0	-	0	100	100	100	100	100	100	100	0	-	-	-	-	-	-	-	-	0
MATERIEL																					
O/R	HH-43B	0	-	0	100	95.2	82.2	92.5	84.3	78.3	86.9	0	-	-	-	-	-	-	-	-	0
NORM	HH-43B	0	-	0	0	2.5	8.7	3.9	5.9	7.3	3.9	0	-	-	-	-	-	-	-	-	0
NORS	HH-43B	0	-	0	0	2.3	9.1	3.6	9.8	14.4	9.2	0	-	-	-	-	-	-	-	-	0
STATISTICAL OPS DATA																					
SCRAMBLES	HH-43B	0	-	-	0	117	242	450	1036	1572	0	-	-	-	-	-	-	-	-	-	0
SAVES	HH-43B	0	-	-	-	-	0	1	11	3	0	-	-	-	-	-	-	-	-	-	0
FSK	HH-43B	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

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TASK: TO PROVIDE ACR (Acft Based in RVN)										SHRED-OUT HH-43B/F												
HARDWARE		FY 64				FY 65				FY 66				FY 67				FY 68				
TIME PHASE		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
REQUIRED	HH-43B	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	HH-43F	0	-	-	0	6	6	6	6	6	6	4	4	4	4	4	4	4	4	4	4	
PROGRAMMED	HH-43B	0	-	-	0	6	2	0	-	-	-	-	-	-	-	-	-	-	-	-	0	
	HH-43F	0	-	-	0	4	6	6	6	6	6	4	4	3	2	4	4	4	4	4	4	
ACTUAL	HH-43B	0	-	-	0	3	5	0	0	2	0	-	-	-	-	-	-	-	-	-	0	
	HH-43F	0	-	-	0	4	6	6	6	6	6	6	6	6	4	4	4	0	-	-	0	
ATTRITION	HH-43B/F	0	-	-	-	-	-	0	1/F	0	-	-	-	-	0	1/F	0	2/F	-	0	1/F	0
PERSONNEL																						
REQUIRED	AIRCREW	0	-	-	0	19	56	38	38	50	38	38	38	38	26	26	26	0	-	-	0	
	SUPPORT	0	-	-	0	13	40	26	26	35	26	26	26	26	18	18	18	0	-	-	0	
ASSIGNED	AIRCREW	0	-	-	0	19	56	38	38	50	38	38	38	38	26	26	26	0	-	-	0	
	SUPPORT	0	-	-	0	13	40	26	26	35	26	26	26	26	18	18	18	0	-	-	0	
MANNING RATIO - %	AIRCREW	0	-	-	0	100	100	100	100	100	100	100	100	100	100	100	100	0	-	-	0	
	SUPPORT	0	-	-	0	100	100	100	100	100	100	100	100	100	100	100	100	0	-	-	0	
MATERIEL																						
O/R	HH-43B	0	-	-	0	90.1	78.7	0	0	81.0	0	-	-	-	-	-	-	-	-	-	0	
	HH-43F	0	-	-	0	89.4	92.0	95.3	93.7	80.3	87.1	84.5	87.8	87.2	89.5	87.5	0	-	-	-	0	
NORM	HH-43B	0	-	-	0	3.3	9.0	0	0	3.2	0	-	-	-	-	-	-	-	-	-	0	
	HH-43F	0	-	-	0	9.9	1.8	4.1	5.2	5.4	5.5	8.5	6.2	4.7	6.9	5.9	0	-	-	-	0	
NORS	HH-43B	0	-	-	0	6.6	12.3	0	0	11.8	0	-	-	-	-	-	-	-	-	-	0	
	HH-43F	0	-	-	0	0.7	6.2	0.6	1.1	14.3	7.4	7.0	6.0	8.1	3.6	6.6	0	-	-	-	0	
STATISTICAL OPS DATA																						
SCRAMBLES	HH-43B	0	-	-	0	300	166	0	0	118	0	-	-	-	-	-	-	-	-	-	0	
	HH-43F	0	-	-	0	493	813	827	1128	1379	1171	1190	1104	700	1060	1135	0	-	-	-	0	
SAVES	HH-43B	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	HH-43F	0	-	-	-	2	1	6	5	13	33	55	77	32	26	23	29	0	-	-	0	
FSK	HH-43B	0	-	-	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
	HH-43F	0	-	-	-	-	-	-	-	0	1	2	0	-	0	2	1	0	-	-	0	

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TASK: TO PROVIDE LBR		SHRED-OUT HH-43B/F																			
HARDWARE		FY 64				FY 65				FY 66				FY 67				FY 68			
TIME PHASE		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HH-43B	0	-	-	-	-	-	-	0	12	17	20	20	20	20	20	20	20	20	20	20
	HH-43F	0	-	-	-	0	6	6	6	6	6	8	8	8	8	8	8	12	12	12	12
PROGRAMMED	HH-43B	0	-	-	-	-	-	-	-	0	11	14	14	18	18	18	18	21	21	21	21
	HH-43F	0	-	-	-	-	-	-	0	2	5	5	5	5	7	7	7	11	11	11	11
ACTUAL	HH-43B	0	-	-	-	-	-	-	-	0	11	17	17	16	16	18	19	22	23	25	25
	HH-43F	0	-	-	-	-	-	-	-	0	5	4	4	4	6	5	5	9	7	7	7
ATTRITION	HH-43B/F	0	-	-	-	-	-	-	-	-	-	-	0	1/B	0	-	-	-	-	-	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	-	-	-	-	-	0	81	93	93	93	100	106	106	106	106	130	130
	SUPPORT	0	-	-	-	-	-	-	-	0	85	91	91	91	96	105	105	105	105	121	121
ASSIGNED	AIRCREW	0	-	-	-	-	-	-	-	0	76	90	93	93	97	104	106	105	123	127	128
	SUPPORT	0	-	-	-	-	-	-	-	0	85	91	91	91	93	99	102	100	119	118	119
MANNING RATIO - %	AIRCREW	0	-	-	-	-	-	-	-	0	94	97	100	100	97	98	100	99	116	98	98
	SUPPORT	0	-	-	-	-	-	-	-	0	100	100	100	100	97	94	97	95	112	97	98
MATERIEL																					
O/R	HH-43B	0	-	-	-	-	-	-	-	0	76.7	79.7	80.4	87.4	81.0	83.4	83.2	90.0	87.1	88.2	89.6
	HH-43F	0	-	-	-	-	-	-	-	0	80.3	87.1	84.5	87.8	87.2	89.5	87.5	83.8	79.4	88.1	87.4
NORM	HH-43B	0	-	-	-	-	-	-	-	0	5.8	9.1	10.4	6.8	10.1	10.3	10.1	6.2	8.7	6.4	6.9
	HH-43F	0	-	-	-	-	-	-	-	0	5.4	5.5	8.5	6.2	4.7	6.9	5.9	13.7	13.1	6.0	8.5
NORS	HH-43B	0	-	-	-	-	-	-	-	0	17.5	11.2	9.2	5.8	8.9	6.3	6.7	3.8	4.2	5.4	3.5
	HH-43F	0	-	-	-	-	-	-	-	0	14.3	7.4	7.0	6.0	8.1	3.6	6.6	2.5	7.5	5.9	4.1
STATISTICAL OPS DATA																					
SCRAMBLES	HH-43B	0	-	-	-	-	-	-	-	0	1934	2161	2515	2845	2429	2321	2737	2821	3380	3625	3679
	HH-43F	0	-	-	-	-	-	-	-	0	25	196	266	240	501	456	550	1588	1752	1561	1838
SAVES	HH-43B	0	-	-	-	-	-	-	-	0	49	3	11	13	30	24	34	40	46	56	72
	HH-43F	0	-	-	-	-	-	-	-	0	4	2	34	25	13	35	24	41	44	53	25
FSK	HH-43B	0	-	-	-	-	-	-	-	-	-	-	0	2	1	0	2	0	5	2	2
	HH-43F	0	-	-	-	-	-	-	-	-	-	-	-	0	1	1	0	0	2	3	1

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Tab HH

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HARDWARE		TASK: TO PROVIDE AIRBORNE MISSION CONTROL (Acft Based In Thailand)																SHRED OUT: HC-54			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HC-54	0	-	0	3	3	3	3	3	5	0	-	-	-	-	-	-	-	-	-	0
PROGRAMMED	HC-54	0	-	0	3	3	3	3	3	4	2	0	-	-	-	-	-	-	-	-	0
ACTUAL	HC-54	0	-	-	-	-	-	0	3	4	2	0	-	-	-	-	-	-	-	-	0
ATTRITION	HC-54	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	-	-	-	0	26	34	18	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	-	-	-	-	0	48	54	40	0	-	-	-	-	-	-	-	-	0
ASSIGNED	AIRCREW	0	-	-	-	-	-	0	26	34	18	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	-	-	-	-	0	48	54	40	0	-	-	-	-	-	-	-	-	0
MANNING RATIO - 1/2	AIRCREW	0	-	-	-	-	-	0	100	100	100	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	-	-	-	-	0	100	100	100	0	-	-	-	-	-	-	-	-	0
MATERIEL																					
O/R	HC-54	0	-	-	-	-	-	-	DATA NOT AVAILABLE ON TDY FORCE				-	-	-	-	-	-	-	0	
NORM	HC-54	0	-	-	-	-	-	-	DATA NOT AVAILABLE ON TDY FORCE				-	-	-	-	-	-	-	0	
NORS	HC-54	0	-	-	-	-	-	-	DATA NOT AVAILABLE ON TDY FORCE				-	-	-	-	-	-	-	0	
STATISTICAL OPS DATA																					
SORTIES	HC-54	0	-	-	-	-	-	0	106	175	195	115	18	0	-	-	-	-	-	-	0
SAVES	HC-54	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
-----	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Tab II

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		TASK: TO PROVIDE ACR (Acft Based in RVN)																SHRED-CUT HU-16B			
HARDWARE		FY 64				FY 65				FY 66				FY 67				FY 68			
TIME PHASE FY		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HU-16B	0	0	4	4	5	5	5	5	5	5	5	5	5	5	1	0	-	-	-	0
	- - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PROGRAMMED	PCS	0	-	-	-	-	-	-	0	5	5	5	5	5	5	5	2	0	-	-	0
	TDY	0	0	4	4	4	4	4	0	-	-	-	-	-	-	-	-	-	-	-	0
ACTUAL	PCS	0	-	-	-	-	-	-	0	5	5	5	5	5	5	5	5	3	0	-	0
	TDY	0	0	4	4	4	4	4	0	-	-	-	-	-	-	-	-	-	-	-	0
ATTRITION	HU-16B	0	-	-	-	-	-	-	-	0	1	0	0	0	1	0	-	-	-	-	0
PERSONNEL																					
REQUIRED	AIRCREW	0	0	33	33	33	33	33	52	52	52	52	52	52	52	52	52	23	0	-	0
	SUPPORT	0	0	47	47	47	47	47	72	72	72	72	72	72	72	72	72	38	0	-	0
ASSIGNED	AIRCREW	0	0	33	33	33	33	33	58	57	55	52	58	57	58	52	23	0	-	-	0
	SUPPORT	0	0	47	47	47	47	47	69	70	68	69	70	67	71	71	38	0	-	-	0
MANNING RATIO - 4	AIRCREW	0	0	100	100	100	100	100	98	96	93	88	98	96	99	100	100	0	-	-	0
	SUPPORT	0	0	100	100	100	100	100	95	97	94	95	97	93	99	99	100	0	-	-	0
MATERIEL																					
O/R	HU-16B	0	-	-	PCS DATA ONLY AVAILABLE IN FY 67	-	-	-	0	88.2	89.8	84.3	74.1	0	-	-	-	0	-	-	0
NORM	HU-16B	0	-	-	PCS DATA ONLY AVAILABLE IN FY 67	-	-	-	0	5.9	8.2	9.5	7.2	0	-	-	-	0	-	-	0
NORS	HU-16B	0	-	-	PCS DATA ONLY AVAILABLE IN FY 67	-	-	-	0	5.9	2.0	6.2	18.7	0	-	-	-	0	-	-	0
STATISTICAL OPS DATA																					
SORTIES	HU-16B	0	-	0	192	278	404	404	229	220	213	204	245	224	255	176	84	0	-	-	0
SAVES	HU-16B	0	-	-	-	0	5	9	12	6	1	6	16	0	1	0	-	-	-	-	0
- - -	- - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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HARDWARE		TASK: TO PROVIDE ACR (Acft Based in Thailand)																SHRED OUT: CH-3C/HH-3E			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	CH-3C	0	6	6	6	15	15	15	16	32	0	-	-	-	Deleted	Requirement	-	-	-	0	
	HH-3E	0	-	-	-	-	-	-	-	-	-	-	-	-	0	9	8	8	8	8	
PROGRAMMED	CH-3C	0	-	-	-	-	-	0	6	6	0	-	-	-	-	-	-	-	0		
	HH-3E	0	-	-	-	-	-	-	-	0	8	8	8	8	8	8	8	8	8	8	
ACTUAL	CH-3C	0	-	-	-	-	-	0	2	5	6	0	-	-	-	-	-	-	0		
	HH-3E	0	-	-	-	-	-	-	-	-	0	7	8	6	6	7	8	8	8	8	
ATTRITION	CH/HH	0	-	-	-	-	-	-	0	1/C	0	0	1/E	2/E	1/E	0	0	0	1/E	0	
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	-	-	-	0	42	43	43	82	82	82	82	82	82	62	62	62	
	SUPPORT	0	-	-	-	-	-	0	47	48	48	72	72	72	72	72	72	72	72	72	
ASSIGNED	AIRCREW	0	-	-	-	-	-	0	28	40	41	81	81	81	77	77	80	69	69	62	
	SUPPORT	0	-	-	-	-	-	0	38	44	45	70	71	71	70	67	68	68	68	69	
MAINTENANCE RATIO - %	AIRCREW	0	-	-	-	-	-	0	43	93	95	98	98	98	94	94	97	104	103	100	
	SUPPORT	0	-	-	-	-	-	0	81	92	94	97	98	98	97	93	94	94	94	95	
MATERIAL																					
O/R	CH/HH	0	-	-	-	-	-	0	76.8	80.4	85.9	86.6	79.6	83.3	84.3	82.7	72.8	66.0	77.3	83.2	
NORM	CH/HH	0	-	-	-	-	-	0	8.9	9.0	4.6	7.4	5.9	10.3	10.0	11.1	7.0	17.5	16.9	11.5	
NORS	CH/HH	0	-	-	-	-	-	0	14.3	10.6	9.5	6.0	14.5	6.4	5.7	6.2	20.2	16.5	5.8	5.3	
STATISTICAL OPS DATA																					
SORTIES	CH/HH	0	-	-	-	-	-	0	208	235	444	609	783	694	520	582	512	465	275	335	
SAVES	CH/HH	0	-	-	-	-	-	0	3	8	34	30	17	41	23	17	12	13	86	16	
REFUELINGS	CH/HH	0	-	-	-	-	-	-	-	-	-	-	DATA NOT AVAILABLE				4/67	1/68	3	14	65

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HARDWARE		TASK: TO PROVIDE ACR (Acft Based in RVN)												SHRED-OUT HH-3E							
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HH-3E	0	-	-	-	-	-	-	-	-	-	0	11	32	14	14	14	14	14	14	14
PROGRAMMED	HH-3E	0	-	-	-	-	-	-	-	-	0	6	8	8	10	14	14	14	14	14	14
ACTUAL	HH-3E	0	-	-	-	-	-	-	-	-	-	0	2	4	5	9	8	10	14	14	14
ATTRITION	HH-3E	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2/E	0	0	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	-	-	-	-	-	-	-	0	19	33	33	83	83	80	108	108	108
	SUPPORT	0	-	-	-	-	-	-	-	-	-	0	34	43	48	91	91	91	123	123	123
ASSIGNED	AIRCREW	0	-	-	-	-	-	-	-	-	-	0	32	32	50	79	80	70	114	106	106
	SUPPORT	0	-	-	-	-	-	-	-	-	-	0	38	41	49	88	93	90	119	118	118
MANNING	AIRCREW	0	-	-	-	-	-	-	-	-	-	0	168	97	151	95	96	88	105	98	98
RATIO - %	SUPPORT	0	-	-	-	-	-	-	-	-	-	0	112	95	102	96	102	99	97	96	96
MATERIEL																					
O/R	HH-3E	0	-	-	-	-	-	-	-	-	-	0	84.0	73.1	51.4	72.1	68.0	59.9	65.7	66.2	66.2
NORM	HH-3E	0	-	-	-	-	-	-	-	-	-	0	5.1	6.2	8.2	22.6	15.0	23.6	23.2	26.8	26.8
NORS	HH-3E	0	-	-	-	-	-	-	-	-	-	0	10.9	20.7	40.4	5.3	17.0	16.5	11.1	7.0	7.0
STATISTICAL OPS DATA																					
SORTIES	HH-3E	0	-	-	-	-	-	-	-	-	-	0	189	526	454	483	892	840	1012	1001	1001
SAVES	HH-3E	0	-	-	-	-	-	-	-	-	-	0	0	7	40	25	93	39	95	70	70
REFUELINGS	HH-3E	0	-	-	-	-	-	-	-	-	-	DATA	NOT AVAILABLE - 4/67			1/68	1	54	46	46	46

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Tab LL

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HARDWARE		TASK: TO PROVIDE ACR (Acft Based in Thailand)																SHRED-OUT HH-53B/C				
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
REQUIRED	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	19	19	19	19	
PROGRAMMED	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	6	6	6	8	
ACTUAL	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	6	6	6	
ATTRITION	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
PERSONNEL																						
REQUIRED	AIRCREW	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	63	63	63	48	48	
	SUPPORT	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	71	71	71	71	71	
ASSIGNED	AIRCREW	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	40	62	62	62	
	SUPPORT	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	54	54	71	71	
MANNING RATIO - %	AIRCREW	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	63	98	129	129	
	SUPPORT	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	76	76	100	100	
MATERIEL																						
O/R	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	40.4	46.7	58.1	67.8	
NORM	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	17.6	20.9	12.8	
NORS	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	39.2	35.7	21.0	19.4	
STATISTICAL OPS DATA																						
SORTIES	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	89	268	181		
SAVES	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	73	8		
REFUELINGS	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	DATA NOT AVAILABLE				-	4/67	1/68	5	75	97

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Tab MM

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HARDWARE		TASK: TO PROVIDE AIRBORNE MISSION CONTROL (Aircraft based in Thailand 2/66 thru 3/67) SHRED-OUT: HC-130H/P (Aircraft based in RVN 4/67 thru 4/68)																			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HC-130H	0	-	-	-	-	-	-	0	4	11	11	11	11	11	0	-	-	-	-	0
	HC-130P	0	-	-	-	-	-	-	-	-	-	-	-	-	0	11	11	11	11	11	11
PROGRAMMED	HC-130H	0	-	-	-	-	-	-	0	4	4	4	4	6	0	-	-	-	-	-	0
	HC-130P	0	-	-	-	-	-	-	-	-	-	-	-	0	11	11	11	11	11	11	11
ACTUAL	HC-130H	0	-	-	-	-	-	-	0	2	2	2	4	4	0	-	-	-	-	-	0
	HC-130P	0	-	-	-	-	-	-	-	-	-	-	-	0	4	11	11	11	11	11	11
ATTRITION	HC-130H/P	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	-	-	-	-	0	33	33	33	63	63	172	172	172	172	154	154	
	SUPPORT	0	-	-	-	-	-	-	0	67	67	67	98	98	234	234	265	265	219	219	
ASSIGNED	AIRCREW	0	-	-	-	-	-	-	0	33	33	33	62	62	108	129	148	129	126	119	
	SUPPORT	0	-	-	-	-	-	-	0	67	67	67	96	96	128	196	237	239	227	203	
MANNING RATIO - %	AIRCREW	0	-	-	-	-	-	-	0	100	100	100	98	98	63	75	86	75	82	77	
	SUPPORT	0	-	-	-	-	-	-	0	100	100	100	98	200	55	83	89	90	103	93	
MATERIEL																					
O/R	HC-130H/P	0	-	-	-	-	-	-	0	-	-	0	0	0	77.6	84.4	89.7	91.7	86.5	91.6	
NORM	HC-130H/P	0	-	-	-	-	-	-	0	-	-	0	14.1	13.5	10.2	13.8	9.1	8.1	10.6	7.4	
NORS	HC-130H/P	0	-	-	-	-	-	-	0	-	0	100	85.9	86.5	12.2	1.8	1.2	0.2	2.9	1.0	
STATISTICAL OPS DATA																					
SORTIES	HC-130H/P	0	-	-	-	-	-	-	-	0	76	172	230	232	264	524	661	739	824	751	
SAVES	HC-130H/P	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
REFUELINGS	HC-130P	0	-	-	-	-	-	-	-	-	-	-	DATA NOT AVAILABLE -			4/67	1/68	9	143	208	

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An excess of HH-3 pilots in February 1967 created a problem of providing sufficient flying time to maintain proficiency for mission accomplishment. The HH-43 units were well manned, however, there was a growing concern over the number of pilots newly assigned that were qualified only to the copilot level. It was estimated that by mid 1967 approximately 55% of HH-43 pilots would fall in this category. As time progressed and the experienced pilot resources were used up, the experience level would no doubt decline to the extent that waivers would be required in order for the units to remain operational.²²

The experience level of many of the enlisted personnel newly assigned to ARRS units in SEA was somewhat lower than that of the personnel rotating. To counteract this growing problem the 3d Group's OJT program was completely revised and increased command and staff emphasis placed on the program.²³

Problems were generating in forecast manning for the 3d Group. In the first 15 days of May 1967, 45 HH-3E pilots were cancelled as were 21 HH-53 pilots, 17 HC-130 pilots, 10 HH-43 pilots and 13 loadmasters. The 3d Group was still operating with outdated unit manning documents (UMD). The latest UMD for any of the ARRS units in SEA was dated 1 October 1966 and had been subject to numerous changes in both organization and authorizations. Action was initiated to correct this deficiency to

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preclude serious personnel shortages at a later date.²⁴ This problem had not been resolved as of 31 March 1968 as evidenced by the following information provided to the 3d Group commander. DCS Personnel at Hq ARRS had been working with MAC Personnel in an effort to correct the forecast manning problem. Their efforts revealed that airmen assigned to ARRS SEA units had probably rotated to the CONUS or other overseas areas some time ago. The 3d Group was requested to perform an audit and provide a corrected package that would insure a factual input into the Personnel Data System (PDS). Once the PDS could be made to show the proper personnel (grade, name and AFSC by unit) then adequate replacements could be obtained. This meant a heavy workload for 3d Group personnel who were already critically short of administrative and personnel technicians.²⁵

On 18 November 1966, firm military personnel ceilings were established by the Secretary of Defense for South Vietnam and Thailand. Military Services were directed to implement necessary procedures to monitor and control personnel strengths and live within the ceilings imposed. USAF designated CINPACAF the executive agent for administering the Air Force ceiling program. A priority listing of deficit manning requirements was established by PACAF and as spaces became available through cancellations or realignments, they were applied to the deficits on this listing.

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ARRS items included on this priority listing in May 1967, were as follows:²⁶

<u>Country</u>	<u>Item</u>	<u>Number Personnel</u>	<u>*Priority Number</u>
South Vietnam	Radio Operators	6	38
South Vietnam	Reorganization ARRS units	62	73
Thailand	Radio Operators	6	35
Thailand	Reorganization ARRS units	16	32

*Separate priority lists were established for each country.

The requirement for 12 ground radio operators for the Rescue Control Centers was of particular concern. PARRC repeatedly requested higher priorities for the radio operator spaces; however, were informed that other AF requirements would have to be filled before those spaces would be available. Temporary relief was provided by PACAF in the form of manning assistance for non-recurring TDY, however, this assistance would not continue indefinitely as these spaces were being taken out of PACAF's authorization.²⁷

Since these radio operators were a critical and integral part of the Rescue Control Centers, the only immediate solution to the ceiling restriction was a realignment of spaces previously approved and authorized against the ARRS ceiling. The ceiling authorization for ARRS in August 1967 added up to 403 spaces in Thailand and 779 spaces in the Republic of Vietnam. Included in these 1,182 spaces were 33 spaces for loadmaster

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and 33 spaces for pararescue functions in the HC-130 squadron. Although previously 60% manned, by August 1967 pararescue personnel had been reassigned and only 17 of the loadmaster authorizations were filled. If the radio operator requirement for the 3d Group JSARC was to be filled it would have to be accomplished by converting some of the presently unused pararescue and loadmaster authorizations. SEA mission requirements for the HC-130 did not require PJ's, and as the surface-to-air recovery system was not being utilized there was no need for the second loadmaster on each aircraft. Sufficient spaces were converted to fill the radio operator requirement, others were shifted to fill urgent requirements throughout the ARRS SEA system, while some were lost to USAF.²⁸

Life support personnel previously authorized in the various equipment branches under the Chief of Supply at each base in SEA had been transferred to the UMD of SEA operational tactical squadrons. This arrangement was authorized by HQ USAF (AFOMO) letter, dated 27 July 1966, in order to make the tactical squadrons self-sufficient in this critical area. As this condition would exist for the duration of hostilities, the 3d Group commander in June 1967 requested assistance from MAC Manpower and Personnel in order to provide this vital service to ARRS aircrews in SEA.²⁹

The lack of control over command assignments posed some problem

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with respect to command control and supervision of operational squadrons. On occasion it was necessary to place a newly assigned rated officer possessing minimum flying hours in mission aircraft, in command of an operational unit. Flying time requirements established for qualification as a Rescue Crew Commander normally precluded commanders in this position of ever attaining higher than copilot status during their SEA tour of duty. This situation did not provide a healthy command environment, particularly in a combat squadron where the "old man" was expected to lead the force. The "back to the cockpit" program had this major disadvantage along with its many advantages.³⁰

To provide a detailed look as to how each mission in SEA was supported with aircrew and support personnel, statistical data was generated to provide a quarterly picture of personnel required versus assigned and the manning ratio percentage. These statistics reflect the personnel situation for each mission/aircraft type from its inception in SEA to phase-out, or to end March 1968. The statistical data was broken out not only by type aircraft and mission, but by location as well, i.e., Thailand or South Vietnam. To provide pinpoint reference to this statistical information which appears on several tabs, reference will be made to a specific tab after a paragraphical summary of personnel support of each mission/aircraft type.

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1. The HH-43B ACR mission was activated in Thailand in FY 4/64. Personnel support was provided by TDY aircrews and support personnel until FY 2/65, when it was changed to a PCS operation, and converted to CH-3C/HH-3E helicopters. Aircrew and support personnel for the HH-43B were continually manned at 100%. (Ref Tab FF, p. 344.)

2. The HH-43B/F ACR mission was activated in the RVN in FY 1/65 and gradually converted to HH-3E's beginning in FY 1/67. This program was continually manned at 100% in both aircrew and support personnel. (Ref Tab GG, p. 345.)

3. The HH-43B/F LBR mission for support of both Thailand and the RVN was activated in FY 2/66. The manning ratio generally fluctuated from 95-100% in both aircrew and support personnel. However, the average LBR detachment consisted of approximately 11-15 personnel (aircrew and support personnel), so anything less than a 100% manning ratio could seriously degrade mission capability. (Ref Tab HH, p. 346.)

4. The HC-54 (Thailand based) mission was activated in SEA in FY 4/65 and phased out in FY 2/66. These aircraft were deployed to SEA with TDY aircrew and support personnel and did not present a personnel problem. (Ref Tab II, p. 347.)

5. The HU-16B provided mission support beginning in FY 4/64, phasing out of SEA in FY 1/68. This force was supported with TDY aircrew and support personnel from FY 4/64 through FY 4/65 and from

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FY 3/67 through FY 1/68. During these time periods the manning ratio for both aircrew and support personnel remained fairly steady at 100%. From FY 1/66 through FY 2/67, when the HU-16 force was changed from TDY to PCS status, the manning ratio never reached 100% for either aircrew or support personnel. This, however, did not pose any serious problems with respect to mission accomplishment. (Ref Tab JJ, p. 348.)

6. The CH-3C/HH-3E ACR mission was broken out to show the personnel support required for the Thailand based units versus that required for the HH-3E units in the RVN. The CH-3C ACR mission in Thailand was activated in FY 1/66 and phased-out in FY 3/66. In-the-field modification redesignated it the CH-3E and subsequently when modified for aerial refueling, the HH-3E. Personnel support does not reflect for the total evolution from CH-3C to CH-3E to HH-3E, as this redesignation had no personnel impact. The CH-3E/HH-3E phase of the evolution began in FY 4/66 with the CH-3E designation phasing out during 1967, leaving the total force designated as HH-3E. Generally, this mission aircraft program experienced no serious problems with respect to personnel support. (Ref Tab KK, p. 349.)

7. The HH-3E ACR mission in the RVN was activated in 1/67 and remained throughout the period of this report. Personnel support of this mission aircraft did pose a problem as a result of overmanning of aircrew personnel. This situation was addressed in the early portion of

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Section XII C of this document. Other than this area personnel support was generally in line with that required to support the mission. (Ref Tab LL, p. 350.)

8. The HH-53B/C ACR mission was activated in Thailand during FY 1/68 and experienced overmanning in aircrew personnel during January - March 1968. (Ref Tab MM, p. 351.)

9. The HC-130H/P mission was activated at Udorn, Thailand during FY 2/66 and at Da Nang in FY 1/67. During FY 4/67 the total mission was consolidated at Tuy Hoa. Generally, personnel support of this aircraft was adequate to satisfy mission requirements. (Ref Tab NN, p. 352.)

D. Materiel

During the period 1967 - 31 March 1968 there were many problems existing in the field of materiel. The HH-3's in SEA required the aerial refueling and the gun installation modification concurrently with providing recovery helicopters for SEA fragged missions. This was a 25 week program. The HH-3's were becoming high time aircraft, therefore, the 3d Group set in motion the requirements to establish an Inspection Replacement As Necessary (IRAN) program. This would remain a continuing long-term requirement in Southeast Asia.³¹

The most significant problem in the materiel area was the high HH-3 NORS rate, which stemmed from a lack of an adequate parts level.

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This subject was briefed to the MAC commander during his SEA visit in March 1967.³² Immediate action was initiated to have AFLC review the HH-3E and HH-53B support posture and report in detail at the next AFLC/MAC Commanders' Meeting.³³ The MAC commander indicated this would be a special subject at that meeting.³⁴

This problem was still not resolved as of 31 March 1968. The AFLC Materiel Assistance Team visited the ARRS HH-3E/53 units in SEA during the period 4-11 February 1968. They were tasked to visit every HH-3/53 unit world-wide in order to determine first hand, why these airframes had such a high NORS rate. Their visit was billed as strictly fact finding, however, many of their "action items" were materiel deficiencies that the 3d Group had complained about in the past, via Emergency Unsatisfactory Report (EUR). The materiel assistance provided by this team was most beneficial in identifying and recommending solutions to some of the 3d Group's local in-house materiel problems. The 3d Group commander indicated that this team visit would result in expedited action by all agencies concerned in providing the required fixes.³⁵

Although the HH-3 problem was not resolved during the period of this report, interim action was taken in an effort to improve the NORS rate. All Rescue aircraft were to be designated as "Vital Weapons Systems" which should reduce excessive transportation delays some times encountered

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in moving NORS items from the depots to SEA.³⁶ The OR rate for the HH-3E was generally higher for the Thailand based unit than for the RVN unit. Beginning in FY 1/66 and carrying through FY 4/68, the HH-3E unit in Thailand maintained an OR rate that generally exceeded the established SEA standard of 80%, and with the exception of FY 2/68 was constantly well above the AF standard of 71%. On the other hand, the NORS rate for this unit was constantly well in excess of the AF standard of 5%, reaching a high of 20.2% in FY 1/68. (Ref Tab KK, p. 349.)

The number of sorties flown, the number of saves accredited, and where appropo, the number of refuelings made are likewise reflected on Tab FF through Tab NN.

The HH-3 unit in the RVN, from FY 1/67 through FY 4/68 exceeded the SEA standard OR rate only during FY 1/67 and for the remaining seven quarters generally fell well below the AF standard of 71%. Their NORS rate was continually well in excess of the AF standard of 5% with a high of 40.4% in FY 3/67. (Ref Tab LL, p. 350.)

The OR rate for the HH-43B ACR mission in Thailand was generally well above the AF and SEA standards, with the NORM/NORS rates presenting a fairly stable trend. This considering 1,572 scrambles were made during FY 1/66. (Ref Tab FF, p. 344.)

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The OR rate for the HH-43B/F ACR mission in the RVN was likewise well above the AF and SEA standards. The NORM/NORS rates fluctuated, but for the most part remained just slightly higher than that considered acceptable by AF. (Ref Tab GG, p. 345.)

The OR rate for the HH-43B/F LBR units supporting both Thailand and the RVN started in FY 2/66 not quite meeting acceptable SEA standards. However, an improvement trend started in FY 3/66 and from that point on generally exceeded established AF and SEA standards. The NORS rate reflected a rather steady downward trend reaching acceptable standards in FY 1/68. The NORM rate fluctuated considerably between the B and the F models. This considering that those units increased the number of scrambles from 1,959 (HH-43B/F) in FY 2/66 to 5,517 in FY 4/68. (Ref Tab HH, p. 346.)

HC-54 OR/NORM/NORS data was not available as this mission was totally prosecuted by TDY aircraft and personnel. The sortie rate was shown beginning in FY 4/65 and running through FY 4/66 when the aircraft was phased-out of SEA. (Ref Tab II, p. 347.)

OR/NORM/NORS data for the HU-16B was available only for the period FY 1/67 - FY 4/67, however, sortie rate and save information was shown beginning in FY 1/65 and carrying through FY 1/68 when the aircraft phased-out of SEA. (Ref Tab JJ, p. 348.)

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The OR rate for the HH-53B/C ACR mission in Thailand was well below acceptable AF and SEA standards. However, the OR, as well as the NORM/NORS rates showed an improvement trend from FY 1/68 through FY 4/68. Sortie rates, saves accredited and the number of refuelings accomplished was shown for this same time frame. (Ref Tab MM, p.351.)

The HC-130H/P almost from its inception in SEA established an OR rate that stabilized well above the acceptable standards.

The HC-130H/P squadron did not become operationally ready until FY 3/67, although the aircraft flew sorties starting in FY 3/66. This situation was due to lack of certain avionics components e.g., LORAN C receiver, that precluded designating these aircraft as operationally ready. For this reason the NORS rate for FY 4/66 was carried as 100%. During FY 1 and 2/67, the NORS rate reflected a decrease due to the aircraft undergoing maintenance, which prevented meeting mission requirements. In FY 3/67 the aircraft were declared operationally ready and from then on met the AF and SEA standards. The NORS rate was generally well below the accepted AF standard of 5%. (Ref Tab NN, p. 352.)

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FOOTNOTES

1. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Monthly Letter, 3 Feb 1966, p. 3.
2. Ltr, 3d ARRGp (RGCO) to Hq ARRS (ARXDC), Subj: Personal Letter to Col Bestow Rudolph, 28 February 1966, p. 2.
3. Ibid., pp. 2-3.
4. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Reorganization of 3d ARRGp, 25 October 1966, p. 1.
5. Ltr, Hq ARRS (ARCCO) to Det 7/MAC, Subj: Justification for an Additional Aerospace Rescue and Recovery Squadron - SEA, 11 Oct 1966, pp. 1-3.
6. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 11 February 1967, pp. 6-7.
7. Ltr, Hq ARRS (AROCp/Maj Crouch) to Hq ARRS (ARXLR/Lt Col Crozier), Subj: Corona Harvest, undated.
8. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 11 Feb 67, op. cit., p. 9.
9. Ibid., p. 3.
10. Ibid., p. 7.
11. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 14 March 1967 w/attachments 2 & 3; (Attachment 2; Msg, 3d ARRGp (RGRC) 50086 Mar 67, Attachment 3; Briefing, Comdr 3d ARRGp to General Estes and General Cunningham), Attachment 2.
12. Ibid., Attachment 3 (Briefing, Comdr 3d ARRGp to General Estes and General Cunningham), p. 5.
13. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 16 May 1966, p. 1.

(Section XI Footnotes - continued)

14. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 10 July 1967, pp. 1-2.
15. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 14 March 1967, w/Attachment 3, op. cit., pp. 6-7.
16. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 6 April 1967, pp. 1-2.
17. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter 3 June 1967, p. 2.
18. Ltr, 3d ARRGp (RGCO) to Comdr, ARRS, 14 March 1967, w/Attachment 3, op. cit., pp. 9-10.
19. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 16 May 1967, p. 5.
20. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 6 March 1968, pp. 3-4.
21. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 11 Feb 67, op. cit., p. 2.
22. Ibid., p. 3.
23. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 6 March 1967, p. 4.
24. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 16 May 67, op. cit., pp. 2-3.
25. Ltr, Hq ARRS (ARPDC) to Comdr 3d ARRGp, Subj: Commander's Monthly Letter, 13 Aug 1968.
26. Ltr, Hq PARRC (PRCCO) to Hq ARRS, Subj: Southeast Asia Personnel Ceilings, 19 May 1967, p. 1.
27. Ibid., p. 2.
28. Ltr, Hq PARRC to Comdr ARRS, 18 Aug 1967.
29. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 3 June 1967, op. cit., pp. 2-3.

(Section XI Footnotes - continued)

30. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 10 July 1967, op. cit., p. 2.
31. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 14 March 1967 w/Attachment 3, op. cit., p. 7.
32. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 14 Mar 1967, op. cit., p. 1.
- MS 33. Msg, 3d ARRGp (RGRC) 10029 Mar 67.
34. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 14 Mar 1967, op. cit., p. 2.
35. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 6 Mar 1968, op. cit., p. 5.
36. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 6 April 1967, op. cit., p. 3.

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XII. LESSONS LEARNED AND RECOMMENDATIONS

A. 1954 - 1961

ARRS did not become actively involved in SEA during this time frame; therefore, lessons learned and recommendations with respect to effective utilization of ARRS airpower cannot be addressed. However, after involvement in the conflict, it became apparent that the lack of planning during this period certainly contributed to the chaotic conditions that existed during the early deployment of ARRS forces. Although it is recognized that all eventualities cannot be identified or covered in a contingency plan it is safe to assume that thorough planning would have provided for a more orderly buildup in the ARRS SEA posture.

B. 1962 - 1964

1. Lesson Learned: In theater SAR responsibility must be clearly defined at the time U. S. forces are committed.

As SAR mission activity increased the problems of coordination and force utilization became more complex. It soon became evident that some type of bilateral agreement between VNAF and USAF was required.

Recommendation: SAR responsibilities should be clearly defined early in contingency operations to allow effective utilization of SAR resources.

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2. Lesson Learned: Improved JSARC control during SAR missions was necessary.

There was no difficulty in directing, controlling and coordinating missions in the Gulf of Tonkin; however, JSARC control and coordination of rescue efforts over continental regions was ineffective. The major contributing factors were, communications, lack of comprehension by JSARC controllers as to force requirements and lack of on-scene knowledge. Timely availability of tactical forces required to support SAR efforts was a continuing problem.

Recommendation: Operational control of the SAR task force should be vested in a single manager. Additionally, a real-time communication link should be provided to insure proper control and coordination between the SARTF, JSARC and sub-RCC's.

3. Lesson Learned: Professional aircrew recovery forces were required as early as 1962.

Until June 1964 there were no dedicated aircraft assigned to the SAR mission. The rescue controllers had the responsibility for SAR but nothing to work with except a few USAF fixed-wing aircraft and on occasion a few Army and Marine helicopters. Those which were made available were not equipped to perform the rescue mission. As air activity increased it

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became apparent that professional SAR forces were required, to improve the effectiveness of SAR efforts.

Recommendation: Contingency plans should provide for deployment of professional SAR forces concurrently with the tactical force.

4. Lesson Learned: Peacetime training provided SAR controllers was inadequate for combat operations.

SAR Center Controllers assigned to SEA were experienced in peacetime SAR procedures, however, the urgency imposed by the hostile environment, and coordination and control of the SARTF required additional training.

Recommendation: ARRS should establish a training program covering combat SAR Center operations. This training should include as a minimum coordination and control of SARTF and reporting procedures.

5. Lesson Learned: SAR mission requirements exceeded SAR aircraft capabilities.

The HU-16 was severely limited in airspeed, ceiling and communication capabilities. Additionally, it had no inland or nighttime recovery capability and due to age was restricted to water landings in mild sea states. For inland recoveries the HH-43B/F was pressed into SEA;

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however, limited range inadequate hover performance, slow speed, insufficient communications and lack of survivability prevented effective execution of the inland SAR requirement. Outmoded aircraft can normally support the peacetime SAR requirements, but cannot safely or effectively prosecute the combat mission.

Recommendation: SAR equipment should be modernized concurrently with the tactical fleet.

6. Lesson Learned: Peacetime SAR concepts, procedures, techniques and tactics were not compatible with a combat environment.

Operational concepts and procedures for the LBR mission in SEA posed no difficulties. However, each ACR mission presented its problems as to force requirements and the tactics and techniques of force employment. Since operation such as that experienced was unprecedented, the initial efforts were "played by ear." Aircrew experience was gained through actual mission participation and recollection of undocumented tactics employed in the Korean Conflict. The lack of formulated combat SAR concepts, procedures, techniques and tactics had a degrading effect on SAR mission accomplishment.

Recommendation: Combat SAR concepts, procedures, techniques and tactics should have been developed for political/geographical

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areas with high potential for U. S. contingency involvement. Additionally, ARRS should maintain a combat SAR force trained and prepared to respond immediately to the high potential contingency area.

7. Lesson Learned: HU-16 aircraft on extended rotational TDY in SEA could not be properly supported.

The accumulated effect of TDY rotation and a manning factor of 1.0 caused a drastic degradation in training and maintenance programs of squadrons supporting SEA. Heavy maintenance on aircraft returning from SEA and IRAN requirements resulted in only one aircraft available at the home station for SAR alert and proficiency training. Augmentation from the HC-54 squadrons alleviated the problem somewhat, but the dissimilar equipment compounded administrative, supply and maintenance problems.

Recommendation: Contingency plans covering the initial deployment of TDY forces must include adequate resources (aircraft and personnel) to support operational, training and maintenance requirements at both the TDY location and home station. Additionally, aircraft on extended TDY must be provided adequate Mobile Spares Kits to support the flying hours generated during TDY status.

8. Lesson Learned: Support of ARRS LBR helicopters was inadequate.

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The initial LBR units deployed with a Materiel Support Kit (MSK) which did not include all necessary items required to adequately maintain the helicopters. To requisition parts the unit was required to pass the part number to Det 3 via SSB. Det 3 then sent a message to the 33d ARS at Naha which then ordered the part. When the part was received by the 33d ARS, it was shipped to Tan Son Nhut AB on 315th Air Division airlift and reshipped to the requesting unit via in-country airlift. As a result of this unwieldy procedure excessive time was required to obtain parts, and some were lost in transit.

Recommendation: Contingency plans and programming plans must provide for adequate support of deployed units until adequate supply channels can be established in-country. The Mobile Spares Kit should be capable of supporting programmed flying hours and STAR procedures utilized for resupply of the kit. The Materiel Support Kit should include all items required to adequately maintain the helicopters.

9. Lesson Learned: Facilities for SAR forces were not adequate to permit effective support of the mission.

When the initial LBR units deployed to SEA, the lack of facilities was the major problem. Inadequate staff planning did not provide for temporary facilities at "bare base" locations (Nakhon Phanom), or established

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bases such as Bien Hoa. This required the few personnel assigned to LBR units to be diverted from assembly of helicopters to the job of preparing facilities for sleeping quarters, maintenance/supply, etc.

Recommendation: Contingency and Programming Plans should identify facilities requirements for all types of ARRS units deploying to established or "bare bases."

10. Lesson Learned: Planning actions were inadequate.

The paramount problem in deploying ARS forces was the lack of thorough planning and coordination between 2d AD, PACAF and ARS. The 2d AD staff understood that the LBR unit could deploy to a "bare strip" and be self sufficient. PACAF and ARS thought that 2d AD knew the manning and capability of ARS and expected 2d AD to furnish logistical support. Therefore, the necessary planning and coordination was, in fact, never accomplished prior to the actual move and for some two weeks thereafter. Since 2d AD assumed ARS and PACAF would deploy a complete package including housing, field mess, cooks, security police, etc., which was not the case, the small LBR units were placed in a position of coordinating their requirements in addition to becoming operationally ready.

Recommendation: Contingency and programming plans should clearly define requirements as well as staff actions necessary to insure

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orderly deployment and adequate support of the SAR force upon arrival. Timely action should be taken to insure all activities are cognizant of these responsibilities. In addition, SAR force requirements should be included in the Bare Base Program.

11. Lesson Learned: The emergency medical treatment available to recovered personnel was inadequate.

The medical technician and pararescue personnel assigned to the units had limited training in emergency treatment which proved inadequate for combat SAR and mass casualty situations.

Recommendation: All combat SAR units should have pararescue personnel assigned. The pararescue training curriculum should be revised to place more emphasis on management of combat casualties and anatomy, physiology, medical terminology and first aid procedures.

12. Lesson Learned: Adequate medical supplies were not available for effective emergency treatment.

Medical supplies were acquired from available host base resources which resulted in a variety of items contained in the medical kits, some of which were of questionable value. Additionally, litters used did not permit the safe movement of casualties, which increased the possibility of

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aggravating the patient's condition.

Recommendation: A standardized medical kit containing adequate medical supplies should be carried aboard all SAR helicopters. Additionally, a transparent litter should be developed which will permit X-ray and determination of patient condition prior to removal from the litter.

C. 1965 - 31 March 1968

1. Lesson Learned: Operational control of SAR forces in theater was not clearly defined, resulting in ineffective utilization of the Search and Recovery Task Force.

Increased air activities and SAR force buildup highlighted the need for more effective management of these vital resources. There was tremendous duplication and lack of coordination except during the actual conduct of a SAR mission. Unfortunately this was too late to work out procedures and command and control responsibilities. This unsatisfactory condition existed until late 1966.

Recommendation: Command and control of SAR forces should be clearly defined at the onset of the contingency. Operational control should be vested in a single manager and designated as a Deputate to the Air Component Commander. Future contingency plans should reflect the single

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manager SAR concept.

2. Lesson Learned: On-scene control of the SAR Task Force required clarification.

Confusion and misunderstanding between the TACC Airborne Command Post and the Rescue Crown aircraft during a SAR mission was detrimental to effective execution of the mission. It became imperative that on-scene control be improved.

Recommendation: A SAR mission control aircraft manned by qualified Rescue personnel should exercise on-scene control of the mission. On-scene control of SAR forces should be clearly defined in contingency plans and this information disseminated to all agencies concerned. Naval and Air Force SAR areas of responsibility should be clearly defined to permit an orderly transfer of SAR mission control from Air Force to Navy and vice versa.

3. Lesson Learned: Tri-Service representation was essential in SAR Center operations.

The increase in tactical operations caused a concurrent increase in SAR activities necessitating better coordination/control between Services to reduce duplication and provide best utilization of SAR forces.

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Recommendation: Contingency operations should be supported by a SAR Control Center comprised of representatives from all of the participating services. This is of primary importance whenever opportune forces are utilized to prosecute the SAR mission.

4. Lesson Learned: Failure to modernize the ARRS SAR fleet on a timely basis resulted in unacceptable recovery rates in Vietnam, due to the lack of a total recovery capability i.e., night, all weather, survivability, range and reaction time.

Progressive modernization of the ARRS SAR force, to match the capabilities of the tactical forces being supported, is mandatory. The rapid advances in high performance aircraft preclude the total reliance in the present generation of search and rescue aircraft. The inability to effect recovery at night, during adverse weather, in heavily defended areas or on a timely basis in the case of deep penetration missions, has had a drastic impact on improved recovery rates. Route Packages V and VI are so heavily defended, that SAR task force access to these areas is for the most part denied. Yet these are the two areas where the majority of the SAR effort is required.

Recommendation:

1. The combat ACR mission must be recognized at

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all levels as a clear and distinct USAF task which demands the development and maintenance of an in-being force, specially trained personnel and mission compatible equipment.

2. Development of a combat ACR capability must be expedited to obtain a level consistent with air technology and capability of tactical forces.

3. These policies which in the past have resulted in complete degradation of combat ACR capability must be revised to insure this essential capability is kept abreast of the state-of-the-art advances in tactical force capabilities, regardless of peace or war conditions.

5. Lesson Learned: A highly trained dedicated combat SAR force must be in constant readiness for contingency operations.

Introduction and subsequent buildup of SAR forces in SEA was characterized with peacetime philosophy and inadequate equipment which left voids in combat concepts, tactics, procedures and techniques. Consequently, the effectiveness of the SAR force was reduced while lessons were learned. Although changes were made, as experience was gained, satisfactory recovery rates were not attained.

Recommendation: To respond effectively to contingency operations, a dedicated combat SAR force, fully equipped and highly trained

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must be in constant readiness. This force must include sufficient equipment and personnel to respond to the wide spectrum of roles; JSARC, LBR, ACR, SAR Task Force and precautionary orbits. This force, in conjunction with tactical units, should develop SAR concepts, tactics, procedures and techniques which can be readily enlarged in various geographical/political area contingencies.

6. Lesson Learned: Documentation of the SEA SAR effort was inadequate and prevented thorough analysis of all facets of operation.

There was considerable information available on successful SAR efforts; however, the majority of data compiled covered out-of-country missions. Information on in-country SAR operations was sadly lacking, particularly in the early time period (1962-1965). Lack of this data precluded accurate assessment as to adequacy of force posture. Additional emphasis should be placed on obtaining more information on unsuccessful rescue attempts and the specific factors contributing to the lack of mission success. Statistics are required on: time from hit to eject; time on ground before rescue; time SAR force alerted to time over objective, etc. Only with such data can a thorough analysis be made of the total Rescue effort.

Recommendation: More emphasis must be placed on the requirement for detailed and accurate reporting of all SAR efforts. A study

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should be made to determine total data required and the most effective method of reporting this information. A shred-out in ARRS reporting which separates rescue of downed airmen from battlefield evacuation and other rescue efforts.

7. Lesson Learned: Personal survivor equipment was inadequate.

Communication between the downed pilot and rescue force was cited as the most serious technical problem in SAR operations. Due to the enemy setting traps for the SAR force, voice contact and authentication was essential. Incompatibility of survival radio batteries, unreliability and inadequate performance seriously encumbered mission execution. Inadequate location aids also hampered recovery operations. Compromise of the downed crewman's position by use of the equipment contributed to ineffective recovery operations.

Recommendation: Personal survivor equipment is a major factor in effective recovery operations, therefore, the equipment must be designed to operate in a combat environment. Additionally, development of optimum equipment should be undertaken and standardized among the Services.

8. Lesson Learned: In-country personnel ceilings prevented adequate manning of SEA SAR units.

Country ceilings, facilities and available real estate dictated

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excessive redesignation and relocation of ARRS units. This did not permit an orderly or economical increase in the organizational posture of ARRS. As a result manning requirements had to be continually identified and supported within the existing in-country ceilings during this organizational evolution. This resulted in under manning of SAR units until country ceilings adjusted and established priorities permitted these positions to be filled.

Recommendation: A continuing evaluation should be made of in-country Air Force (all levels) overhead personnel, to insure adequate manning of tactical and SAR forces.

9. Lesson Learned: Professional staff guidance in the functional areas of Safety and Information was necessary.

With the buildup of SAR forces it became evident that professional staff functions were required in the Safety and Information areas. These functions had been conducted on an additional duty basis which proved unsatisfactory.

Recommendation: A staff safety officer should accompany the initial deployment of forces and establish an effective safety program. The information program likewise should be established as a staff function and manned by qualified personnel.

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Lessons learned and recommendations as pertains to specific
ARRS missions in SEA i. e., JSARC, LBR and ACR will be further addressed
in Volumes II, III and IV.

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GLOSSARY

ARPA - Advanced Research Projects Agency
ASD - Aeronautical Systems Division
AAVS - Aerospace Audio-Visual Service
ARRGp - Aerospace Rescue and Recovery Group
ARRS - Aerospace Rescue and Recovery Service
ARRSq - Aerospace Rescue and Recovery Squadron
AD - Air Division
AFLC - Air Force Logistics Command
AFSC - Air Force Systems Command
ANG - Air National Guard
AOC - Air Operations Center
AOB - Air Order of Battle
ARS - Air Rescue Service
ARS - Air Rescue Squadron (when used with numerical designator such as
33d ARS)
ASOC - Air Support Operations Center
ATCC - Air Training Combat Crew
ATC - Air Training Command
ATW - Air Transport Wing
ARC - Airborne Radio Communication
ACR - Aircrew Recovery

(Glossary - continued)

AA - Anti-Aircraft, AAA - Anti-Aircraft Artillery

AW - Automatic Weapons

BPE - Best Preliminary Estimate

CTF - Carrier Task Force

CARA - Combat Aircrew Recovery Aircraft

CCT - Combat Crew Training

CCTS - Combat Crew Training School

CINCPAC - Commander in Chief, Pacific

CINCPACAF - Commander in Chief, Pacific Air Forces

COMAC - Commander, Military Airlift Command

COMMACV - Commander, Military Assistance Command Vietnam

CINCPACFLT - Commander in Chief, Pacific Fleet

COMNAFORV - Commander, Naval Forces Vietnam

CFP - Concept Formulation Package

CONUS - Continental United States

CAL - Cornell Aeronautical Lab

DMZ - De-Militarized Zone

DRV - Democratic Republic of Vietnam

DOD - Department of Defense

DF - Direction Finding

DDR&E - DOD Research and Engineering

(Glossary - continued)

EARC - Eastern Air Rescue Center
ECM - Electronic Countermeasures
EUR - Emergency Unsatisfactory Report
ECP - Engineering Change Proposal
EE - Escape and Evasion
FTD - Field Training Detachment
FAC - Forward Air Control
GMT - General Military Training
HF - High Frequency
IRAN - Inspection Replacement As Necessary
IMC - Instrument Meteorological Conditions
IHAS - Integrated Helicopter Avionics System
ICAO - International Civil Aviation Organization
JCS - Joint Chiefs of Staff
JSARC - Joint Search and Rescue Center
LBR - Local Base Rescue
LBRCF - Local Base Rescue Contingency Force
MOB - Main Operating Base
MSK - Materiel Support Kit
MATS - Military Air Transport Service
MAC - Military Airlift Command
MM - Military Airlift Command Manual

(Glossary - continued)

MACV - Military Assistance Command Vietnam

MIPR - Military Interdepartmental Purchase Request

MOSPAK - Mobile Spares Kit

MTT - Mobile Training Team

MTU - Mobile Training Unit

NKP - Nakhon Phanom

NASA - National Aeronautics Space Administration

NAVAIDS - Navigational Aids

NCO - Non-Commissioned Officer

NVN - North Vietnam

NORM - Not Operationally Ready - Maintenance

NORS - Not Operationally Ready - Supply

OSD - Office of the Secretary of Defense

OJT - On-the-Job Training

OT&E - Operational Test and Evaluation

OR - Operationally Ready

OPORD - Operations Order

OPLAN - Operations Plan

PACAF - Pacific Air Force

PARC - Pacific Air Rescue Center

PARRC - Pacific Air Rescue and Recovery Center

(Glossary - continued)

PJ - Pararescueman

PCS - Permanent Change of Station

PDS - Personnel Data System

PSP - Pierced Steel Planking

PAD - Program Action Directive

PCP - Program Change Proposal

PCR - Program Change Request

PD - Programming Document

QOR - Qualitative Operational Requirement

RVN - Republic of Vietnam

RCC - Rescue Control Center

RESCAP - Rescue Combat Air Patrol

RESCORT - Rescue Escort

RFP - Request for Proposal

RAD - Requirements Action Directive

R&D - Research and Development

RP - Route Package

SAR - Search and Rescue

SARC - Search and Rescue Center

SARCC - Search and Rescue Control Center

SAR SOP's - Search and Rescue Standard Operating Procedures

SSB - Single Sideband

(Glossary - continued)

SSEB - Source Selection Evaluation Board

SEA - Southeast Asia

SEAOR - Southeast Asia Operational Requirement

SVN - South Vietnam

SATS - Specialized Aircrew Training School

STAR - Speed Through Air Resupply

SPO - System Program Office

TAC - Tactical Air Command

TACC - Tactical Air Control Center

TACAN - Tactical Air Navigation

T.O. - Technical Order

TTU - Technical Training Unit

TDY - Temporary Duty

UHF - Ultra High Frequency

UPT - Undergraduate Pilot Training School

UE - Unit Equipment

UMD - Unit Manning Document

USCG - U. S. Coast Guard

VTOL - Vertical Take Off and Landing

VHF - Very High Frequency

VC - Viet Cong

(Glossary - continued)

VNAF - Vietnamese Air Force

VFR - Visual Flight Rule

WG - Wartime Guidance

WRAMA - Warner Robins Air Materiel Area

ZI - Zone of Interior

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SOUTHEAST ASIA (U)

1954 - 31 MARCH 1968

CONTINUING REPORT

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18 DEC 1970

SUBJECT: Corrections to ARRS CORONA HARVEST Volumes I through VII

TO: ASI/INI
Maxwell AFB AL 36112

1. Reference is made to telecon between Mr. Hardt, ARRS/XPX, and Major Smith, ASI/INI, on 17 Dec 70. It is a pleasure to forward necessary corrections to ARRS CORONA HARVEST Volumes I through VII to assist your staff.
2. In accordance with INI message 082130Z Dec 70, the following page and pen and ink corrections will be made to ARRS CORONA HARVEST Volumes I through VII:

a. Volumes I, II, III and IV:

Remove
Page ii (Preface)

Insert
Page ii (Security Instructions)

Page iia (Abstainer)

Page iv (Table of Contents)

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b. Volumes V, VI and VII:

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Page iii (Abstainer)

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2. The following pen and ink corrections will be made to Volumes I, II, III and IV:

- a. Vol I, page viii; change total number of pages to read 407.
- b. Vol II, page xii; change total number of pages to read 273.
- c. Vol III, page xii; change total number of pages to read 276.
- d. Vol IV, page viii; change total number of pages to read 200.

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CORONA HARVEST

Volume II

JOINT SEARCH AND RESCUE CENTER (JSARC)

IN SOUTHEAST ASIA

1954 - 31 March 1968

HQ ARRS

DCS/PLANS

20 May 1969

Prepared by

Lt Col Gordon W. Crozier
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Maj. Joseph S. Granducci, II

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INTRODUCTION

The ARRS input to the Air Force Corona Harvest Project, covering the 1954 - 31 March 1968 time period, has been addressed in four separate volumes as follows:

Volume I - USAF Search and Rescue in Southeast Asia

Volume II - Joint Search and Rescue Center (JSARC) in Southeast Asia

Volume III - Local Base Rescue (LBR) in Southeast Asia

Volume IV - Aircrew Recovery in Southeast Asia

Volume I presented a sequential overview of the total ARRS involvement in Southeast Asia during the 1954-1968 period and, as such, did not adhere to the format outlined in Corona Harvest Operating Instruction dated 1 November 1968. In addition, it provided sequential continuity to planning, rationale and decisions which strict adherence to the approved Corona Harvest format would not permit. The functional areas of Training, Research and Development, Safety, etc., which were somewhat common to all missions, were addressed in Volume I to preclude total redundancy in the other three volumes.

Volumes II, III and IV do adhere to the approved Corona Harvest format and address in detail the missions of SAR Command and Control, Local Base Rescue and Aircrew Recovery which were not covered in depth

in Volume I. This volume, as it pertains to the mission of the Joint Search and Rescue Center, concepts of operation, equipment deficiencies, etc., is, for the most part, independent of the other volumes. In some instances, page reference has been made to the other volumes to provide the reader ready access to detailed information on a particular subject, if deemed necessary.

JOINT SEARCH AND RESCUE CENTER (JSARC)
IN SOUTHEAST ASIA

1954 - 1961

The first recorded indication of Air Rescue Service (ARS) participation in Southeast Asia (SEA) was in January 1962. It was not until this time that the first ARS controller personnel were deployed to SEA to establish a Search and Rescue control center for 2d ADVON.¹ For this reason, no attempt will be made to address the Air University (AU) format for the 1954-1961 time period. However, some background information will be provided on the evolution of SAR control centers which subsequently were introduced into SEA under the generally accepted title of Joint Search and Rescue Center (JSARC).

On 7 February 1958, Air Rescue Service sponsored a conference at Orlando Air Force Base, Florida for the purpose of drafting a USAF aircrew recovery program. The objective of the conference was: "To determine the best means within available resources for providing an aircrew recovery program for the USAF with standardized procedures, training and communications for the recovery of all aircrews of all USAF commands in peace and war, friendly or enemy areas."²

At the outset of the conference it was apparent that the USAF search and rescue structure was not staying abreast of the global air capabilities of

the Air Force. It was the old story in a new frame of reference -- horse and buggy thinking in the age of the jet, rocket and atom. The compartmentalized and specialized SAR structure was too rigid and limited to fit in with the global characteristics of jet and long-range support aircraft.³

Two fundamental conclusions were reached as a result of this conference. First, that the USAF needed a comprehensive global aircrew recovery program with standardized procedures, training and communications for all USAF aircrews in times of peace and war in friendly or enemy areas. The second conclusion was that the Air Rescue Service should be reorganized to develop the specialized recovery techniques and that a single system should be established to support the USAF as a whole. The years 1957 and 1958 witnessed the USAF Search and Rescue concept change from specialized area and compartmented operations to a global concept of standardized procedures and operations.⁴

At this point in time, the reorganization of the Air Rescue Service was proposed. This came as the direct result of the February 1958 conference, which was an effort to realign Rescue capability within the Air Force itself. A second conference was held in June to simplify and make effective a system for its use by the three services.⁵

Then came the problem of implementation. For the remainder of

the year Rescue continued its efforts to obtain reorganization of the USAF prime Search and Recovery activity. This was finally realized, and on 18 March 1959, Air Rescue Service was officially reorganized in support of a USAF global aircrew recovery program.⁶

This most recent reorganization resulted in a Headquarters Air Rescue Service, 17 squadrons and three detachments. The three detachments were designed to provide the control center or control nucleus to make the entire global system work. Called "ROCS" (Recovery Operation Centers), Detachment One was established in Hawaii in support of the operation of the Pacific Air Forces (PACROC); Detachment Three in Europe in support of the operations of the Air Forces in Europe (EUROC); and Detachment Two at Orlando Air Force Base, Florida, in support of the North America area of operations (NAROC).⁷

These recovery operations centers acted as coordination and control centers, providing centralized direction and decentralized execution of the USAF global Rescue/Recovery program. While the 17 squadrons were conveniently located to provide for peacetime search and rescue work, they were strategically located for war operations as well.⁸

As stated previously, the generally accepted designation of the SAR control function was JSARC. The various documentation used in

preparation of this volume referenced a variety of titles for this function; however, to eliminate confusion it will, for the most part, be referred to as JSARC throughout the volume. The term JSARC is synonymous with Joint Rescue Coordination Center (JRCC) as referenced in later documents.

VOLUME II

JSARC IN SOUTHEAST ASIA (1954-1961)

FOOTNOTES

1. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, p. 1.
2. John L. Vandegrift, Jr., A History of the Air Rescue Service (Rollins Press, 1959), pp. 167-168.
3. Ibid., p. 168.
4. Ibid.
5. Ibid., p. 169.
6. Ibid.
7. Ibid.
8. Ibid.

CONFIDENTIAL

TASK ANALYSIS

1962-1964

1. LIST AND DESCRIBE EACH ASSIGNED TASK:

JSARC: Air Rescue Service and specifically Pacific Air Rescue Center (PARC) was tasked in late 1961 to establish a staff agency within the 2d ADVON Air Operations Center (AOC) to provide command and control for the SAR effort.

The exact history and chronology of the JSARC task assignment and requirement identification could not be firmly reconstructed. Documentation available and supporting evidence indicated that some "SAR control" need was recognized in late 1961 as part of the planning for deployment of JUNGLE JIM/FARMGATE forces. In December 1961, ARS controller personnel were alerted for deployment to a classified destination. They were informed that their initial stop would be at Clark AB in the Philippines where they would be assigned to Temporary Duty (TDY) with the 2d ADVON AOC. They would also receive further instructions as to their duties and final destination. After arrival at Clark, they were briefed in an apparently piecemeal fashion, informed that they would be going to Tan Son Nhut AB and sent to a ground school on air/ground operations.¹

The training at Clark lasted for about a week during which they

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received instruction on the operation of the AOC. This was completely new to the ARS controllers who were familiar with the task of operating a "rescue control center" but not necessarily with the overall operations of a Joint Operations Center (JOC). They were indoctrinated in the total operation as it was anticipated that at times the Rescue controller would be the only operations officer in the combat control center and would be making decisions on matters other than Rescue.²

The definition of the contingency, dedicated facilities, the methodology to control a SAR effort, and definitive SAR responsibility directives were many months, even years, in coming. Of immediate concern was the confusion surrounding the deployment to Tan Son Nhut of the AOC personnel. This initial ARS force was alerted about Christmas of 1961 and deployed from their respective bases in PACAF in early January 1962. These controllers anticipated that they would be immediately deployed to their classified destination; however, facilities were not available at Tan Son Nhut, so they were detained at Clark. They were assigned to the 2d ADVON under 13th AF. As one of these officers stated, "How they came about that, I don't know. I heard something about a 2d Air Division being in Europe, while we were there, but I couldn't verify that." The 2d ADVON, as the designator implied, was an advanced echelon and all personnel were assigned on a TDY basis. Still uncertain as to the job at hand, this small

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group arrived at Tan Son Nhut approximately 10 January 1962.³

Upon arrival of the AOC personnel at Tan Son Nhut, no U. S. SAR system was in existence, as evidenced by the following report:⁴

Initially, facilities were inadequate in that we could not even obtain a desk within the AOC. . . . SAR procedures were developed for duty controllers. . . .

Essentially then, at least in retrospect, those people sent to perform the SAR control task were aware of the task to be performed and had been assigned to that duty. The initial task was to provide the 2d ADVON AOC with a Search and Rescue control center. This was to include training of counterpart Republic of Vietnam Air Force SAR controllers in the tasks of planning and controlling SAR operations and efforts in South Vietnam.

At the start of 1962, only six TDY personnel were involved in the SAR effort in SEA. By June 1962, these TDY personnel were converted to Permanent Change of Station (PCS) status, but remained six in number. It was not until October 1964 that the total ARS manpower of the SAR center was increased to 12 spaces.⁵ This small force exerted a disproportionate influence on the total Southeast Asia SAR picture, since they "developed by doing" operational SAR doctrine; consequently, the present body of doctrine was written after the fact as a result of those early actions.

The SAR control tasks were the working expression of SAR doctrine,

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whereas hardware, support and facilities were constraints on the expression of SAR doctrine and concepts.

2. FOR EACH TASK:

a. HOW DOES TASK RELATE TO CURRENT CONCEPTS?

Military Air Transport Service (MATS) published Special Order (S. O.) G-27 on 23 March 1962 which created Detachment 3 of Pacific Air Rescue Center on 1 April 1962. Prior to that time there was no record of ARS actions being directed toward providing staff planning for SEA SAR control. After the creation of Det 3, the primary task of the SEA JSARC was not changed, i. e. , to control SAR efforts in the name of the Commander, 2d ADVON, which subsequently became the 2d Air Division, and during the 1965-68 time frame, the 7th AF. One of the initial TDY controllers stated:⁶

Basically it changed when they organized Det 3 in the summer of 62. . . and the PCS people arrived and formally set up a Detachment 3. At that time, they became part of the Pacific Rescue forces under PARC, and they also then assumed the function of a JSARC instead of liaison on an air operations staff. . . .

From the onset, the SAR control task, including the combat aircrew recovery control task, was essentially the same as had been practiced in Korea.

b. WHAT WAS THE PURPOSE (NATIONAL/MILITARY OBJECTIVE) OF DOING TASK?

There was no indication of a specified national SAR objective at the initiation of the Search and Rescue Center (SARC) operation. It was the policy of ARS, during 1961, to provide SAR support to any agency of the U.S. government that forwarded, with reasonable justification, a request for such support. In keeping with this policy then, it can be logically concluded that the staff actions which developed the 2d ADVON in November 1961, also provided for SAR capability in the 2d ADVON AOC. Unfortunately, ARS had not been kept at the same state of readiness as local fire departments which, during periods of "no work," were consistently updating their equipment and hiring new personnel. ARS forces had been stretched well beyond the normal limits of their manning and equipment; still, when the need was recognized for a SAR control capability within the new 2d ADVON AOC, the request was honored.

Although no documentation from the 1961-62 time period was found that supported either national or military objectives, the basic national and military objectives for that period were stated and restated in various documents, studies, requirements statements and presentations made before committees of Congress. These various sources identified the military objective as: to provide for control of search and rescue efforts designed to "conserve the U.S. military resource." Conservation of the U.S. military resource provided a secondary benefit to the U.S. national effort in that

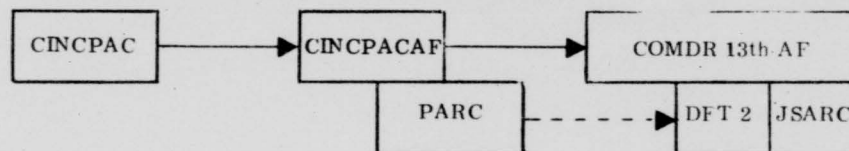
direct "information sources were denied to the enemy." Auxiliary military benefits were derived from the "increased morale" and, therefore, an increased mission effectiveness of the tactical forces that relied on combat SAR operations. Therefore, it can be assumed that there was a national and a military objective served by the establishment of the search and rescue control capability within the 2d ADVON AOC.

c. WAS ASSIGNMENT OF THIS TASK TIMELY?

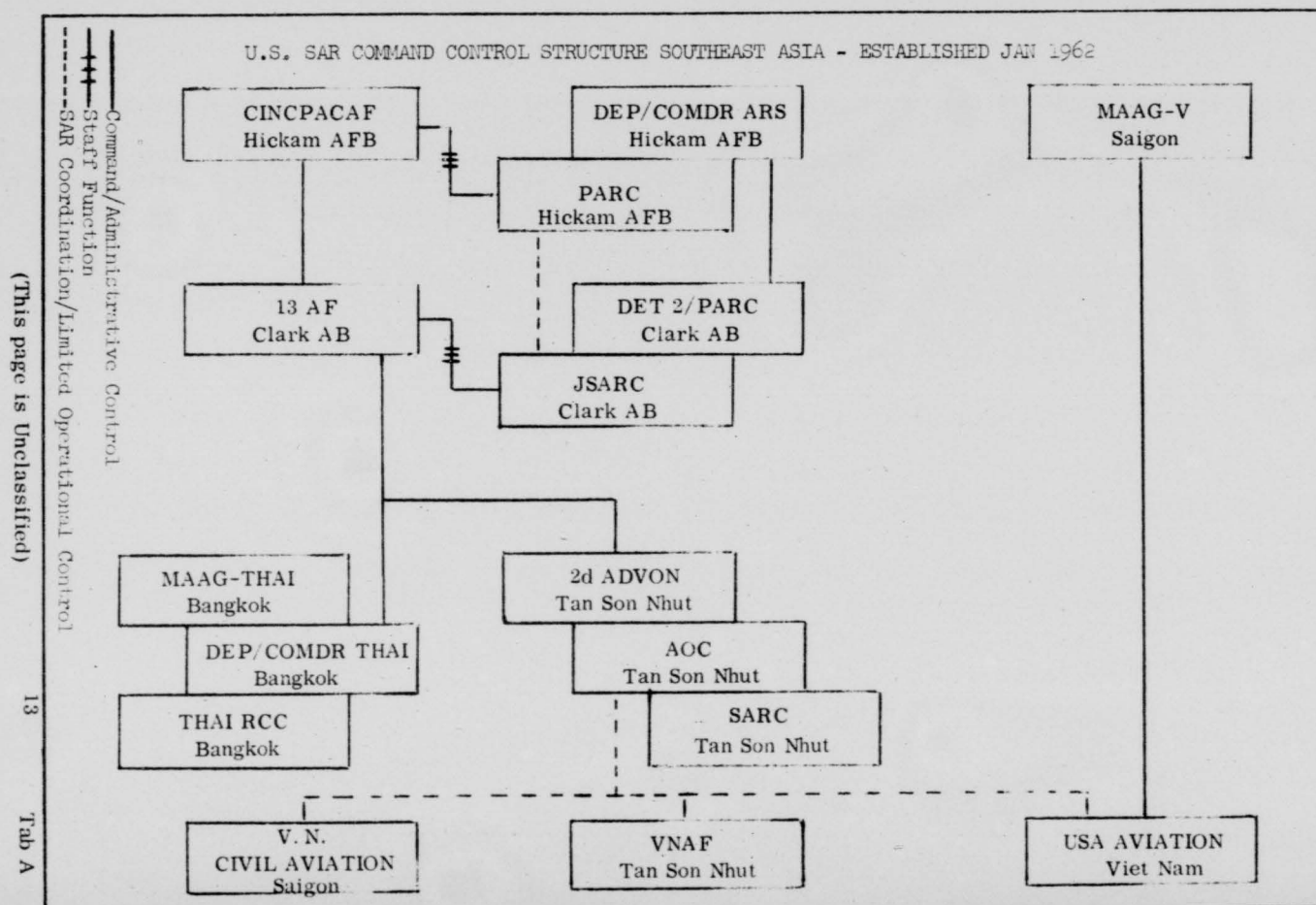
Since the SAR control capability was provided concurrently with the U. S. command and control organization in SEA, then the assignment of the SAR task must be considered timely. There appears to be some question, however, of the method by which the task assignment was made. The reader should keep in mind that initially, the 13th AF Commander was charged by the Commander in Chief, Pacific Air Forces (CINCPACAF) with the U. S. military SAR responsibility for the Southwest Pacific - Southeast Asia Sub-region which, at the time, included what is now known as the Southeast Asia Sub-region -- namely, the Saigon, Bangkok and Rangoon Flight Information Regions (FIR). International civil SAR responsibilities within this area were, and still are, vested in the respective sovereign nations charged with the operation of these FIR's in accordance with the provisions of the Convention on International Civil Aviation.

It follows then, that a 13th AF/Vietnamese SAR agreement would be required to properly control and coordinate all SAR activities within the Saigon FIR. The U.S. SAR control and authority structure which developed in December 1961 was organized as shown in Tab A. A SAR agreement with the Vietnamese would be mandatory if the U.S. tactical forces were to operate within the confines of international SAR agreements and provide SAR control/assistance for other forces within Vietnam.

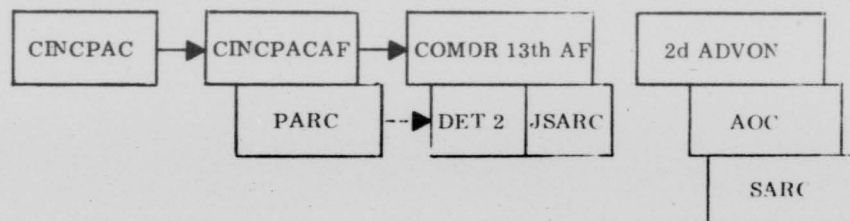
In order for 2d ADVON to become a party to an international SAR agreement, an uninterrupted U.S. chain of delegated SAR authority was required. The existing chain of U.S. SAR authority in the Southwest Pacific - Southeast Asia Sub-region, prior to December 1961, was:



Under the existing operational doctrine, ARS provided professional Rescue personnel who manned and operated a SAR Center for, and in the name of, the appropriate theater commander. Hence, during this time frame (1 January 1962 through 31 March 1962), we see the TDY deployment of ARS SAR controller personnel to Tan Son Nhut to man and operate the

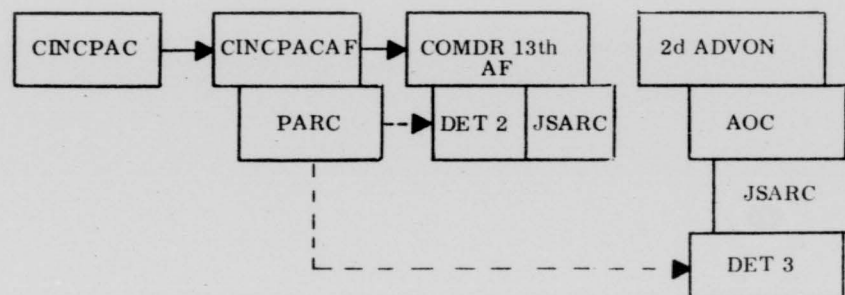


2d ADVON SARC. The following SAR coordination/control picture for SEA resulted:

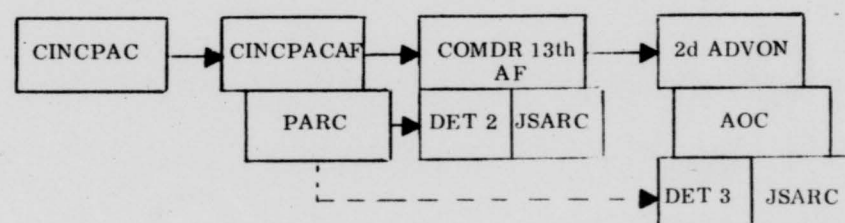


It is of interest to note that although the responsibility for coordination of SAR activities within the Southwest Pacific - Southeast Asia Sub-region was assigned to Commander, 13th AF; SAR Coordinator authority and overall operational control of primary SAR forces was retained by CINCPACAF who, in turn, discharged this authority and control through his Staff SAR Advisor, Commander, PARC. Utilizing MATS/ARS personnel resources, Commander, PARC, provided the then existing numbered Air Forces under PACAF, SAR controller detachments which operated JSARC's for the respective area commanders. Basically, these Dets/JSARC's fulfilled the individual area commander's responsibilities by coordinating all military SAR activities within a specified sub-region; and executed CINCPACAF's operational control authority by controlling SAR operations as directed by Commander, PARC. With the tempo of operations in SEA

increasing, and with the arrival of PCS ARS controllers, Detachment 3, PARC, was established to man and operate the 2d ADVON JSARC. This action resulted in the following SAR coordination/control authority between 1 April 1962 and December 1962:



Finally, the assignment of U. S. military SAR coordination responsibility from Commander, 13th AF, to Commander, 2d ADVON, in the early winter 1962, achieved the following acceptable, but not yet perfect, SAR coordination/control chain:



It wasn't until several months after the arrival of the first PCS Det 3 Commander, and after he had performed a thorough research of SAR Regulations, that it was determined there was no 13th AF Regulation which delegated SAR authority to 2d ADVON. In late 1962 or early 1963, he contacted Detachment 2 of PARC, located at Hq 13th AF, and asked for this type of directive. He was advised that he should write something suitable for use by Det 3 and submit it for approval. As a result, a 13th AF Regulation was later published specifying the waters west of the Manila FIR, to include everything over to the New Delhi FIR, as vested in 2d ADVON. This included the Saigon, Bangkok and Rangoon FIR's. After publication of this regulation, the Det 3 Commander paid a visit to the Commander of the SAR control agency at Don Muang, Bangkok, to advise him that this new regulation delegated him the SAR authority for the Bangkok and Rangoon FIR's.⁷

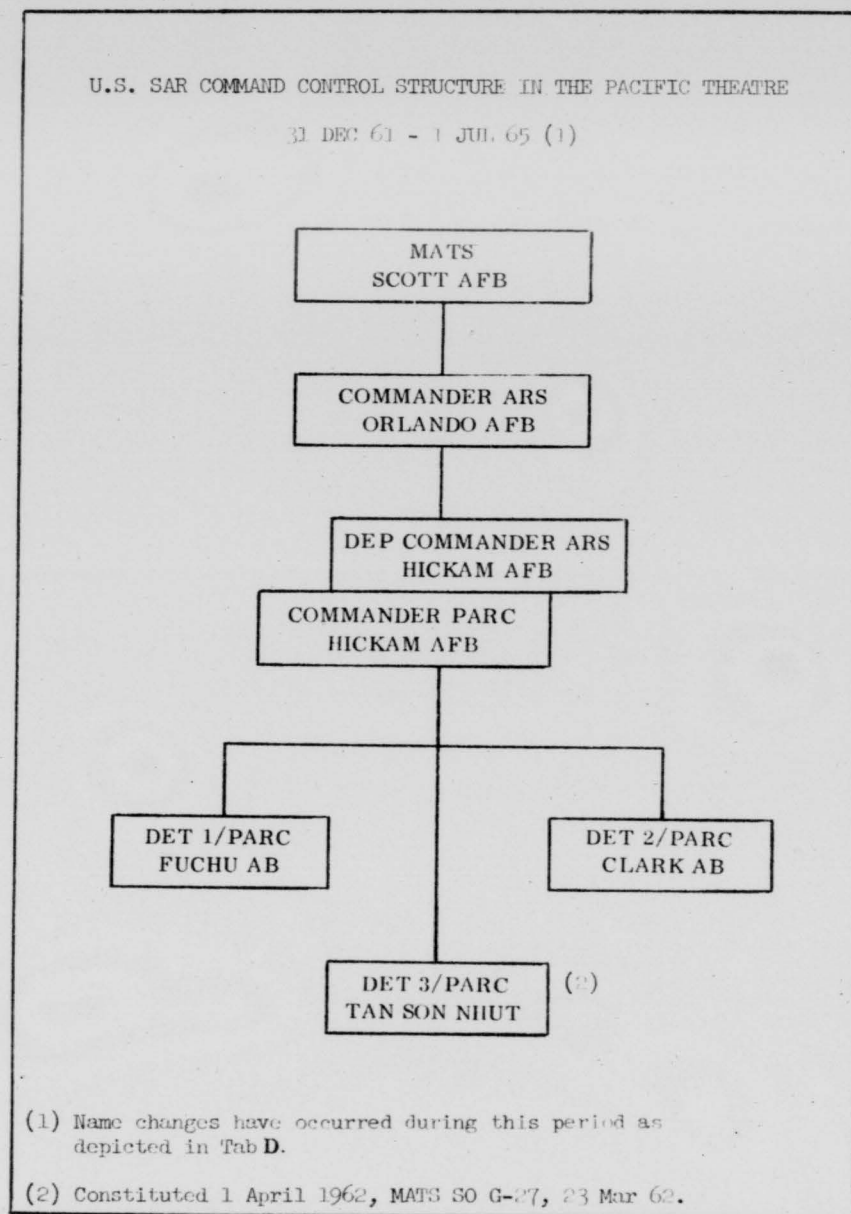
These general organizational concepts were utilized in most ARS dealings with any SAR authority. Complicated as these relationships may seem, they were workable answers to the multifarious command/control and operations control/SAR authority vagaries which existed throughout the world.

The ARS Command/Administration control for support, training and doctrine when separated from SAR authority and operational control

for the Pacific Theater was organized as reflected in Tab B.

However, despite those established concepts, there was no record of any SAR agreement between the 2d ADVON and the Vietnamese during the first half of 1962, as there was no record of any written instruction assigning U.S. SAR authority from 13th AF to 2d ADVON. The lack of agreements and written delegation of SAR authority coupled with the command/control structure that ARS controllers worked under, posed problems. For example, one of the first TDY controllers indicated that he worked for a Major, who worked for the JOC Commander, who worked for the Commander of 2d ADVON who reported to the Commander of the Military Assistance Advisory Group (MAAG). In addition, the 2d ADVON Commander represented the air arm of the Vietnamese MAAG. The ARS controllers had no contact with the 13th AF JSARC. They did try to keep PARC advised of what was going on, but beyond that, ARS personnel were a part of 2d ADVON and not recognized as belonging to the Rescue system. ARS controllers, during this early period, experienced considerable difficulty in establishing written agreements and directives as a result of this command/control structure. As one of the first TDY SAR controllers stated:⁸

. . . we had considered going to PARC for a decision on something and we were informed that we didn't work for them that we were working for 2d ADVON . . . at the time I left we had no written agreements with anybody. However, we did have informal verbal agreements with the Corps Commanders and the Army for use of the



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Army helicopters, with the Navy personnel that could possibly be of assistance This was an informal agreement and then we told them that we would be coming out with a formalized SAR plan which would include them as secondary SAR forces The SAR plan and agreement were fairly well along when we left And had been, I believe, given to the Commander of 2d ADVON for his approval in a draft form. It was not finalized before I left.

The assignment of the SAR control task was then timely within the context of the recognition of the 2d ADVON SAR responsibility, and was a tactical necessity required by the introduction of JUNGLE JIM/FARMGATE forces in SEA. Assignment of the SAR control authority within the existing framework of the Pacific Theater control agencies, however, was not accomplished.

It is significant to note at this point that throughout the 1962 time frame, historical documents of PARC failed to indicate the existence of SAR forces in SEA. Even after the formal publication of the 22 March 1962 special orders by Hq MATS, designating the SAR control agency, Detachment 3 of PARC, historical documents continued to be void of any reference to a SAR control agency being located in SEA. The void appears to be in the area of search and rescue control planning and programming functions. Basic support functions were provided on an as available basis by the 2d ADVON, whereas, planning and programming were accomplished by the controllers themselves.

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To establish a SAR network, Det 3 personnel contacted the Army advisors to each of the Corps areas in Vietnam and received authorization to arrange rescue support with the Army helicopter squadrons on a non-interference basis. The cooperation of the Army in this effort was excellent. The SAR controllers utilized the existing communications system, such as it was, to arrange contacts to alert the Army helicopters for search and rescue missions. USAF forces at Bien Hoa, which were equipped with C-47, B-26 and C-123 aircraft, were also alerted as they were to be used for search and to provide a communications CAP. A SAR network was established through the AOC and the outlying Air Support Operations Centers (ASOC) in each Corps area, and SAR procedures were developed for duty controllers in the ASOC's. In addition, the Navy MAAG in Saigon was contacted to obtain authorization to utilize whatever Navy forces might be available. The communications picture in South Vietnam was very poor during this time period. One SAR controller stated that:⁹

. . . we (SAR controllers) developed the first communications diagram for use within the AOC. using all the various communication forces we had located, to assist us in contacting the Army, Vietnamese bases, etc. . . .

These SAR duty controllers, trained to control SAR missions within a highly complex structure of international and inter-service SAR agreements, were sent TDY to perform the SAR control task. They found

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on their arrival none of the accustomed operating procedures ; communications networks, established Joint Staff/Joint Service, or international relationships.

With no SAR network, no SAR agreements incumbent on other U. S. or indigenous forces, the controllers had to start from the beginning. During the first six months of 1962, most of the SAR control effort was directed toward establishing lines of communications and "selling" the SAR mission to participating forces. The "sales force" utilized their duty days (those days which were scheduled to allow assigned personnel to perform administrative functions as opposed to those days devoted to manning the search and rescue control center) to visit Corps areas, flying units, Naval forces, the Military Assistance Advisory Group, Vietnam (MAAG-V) staff, as well as any indigenous groups from whom SAR assistance might be solicited. To perform this function, almost any means of transportation was used, running the gamut from bicycles to C-47's. In fact, during this period, the USAF Air Attache volunteered the use of the Embassy's C-47 on a non-interference basis.

Assigned SAR personnel endeavored to assist the Vietnamese as well as the 2d ADVON AOC staff. Practically speaking, and as a matter of expediency, they performed a myriad of tasks not normally associated with

their Air Force Specialty Code (AFSC) 1435H, i.e., intelligence briefers and combat operations officers. One of the early SAR controllers recalled that they did pay visits to the Vietnamese SAR center to get acquainted with their personnel and to make suggestions for improvement to their SAR systems. Det 3 believed that eventually there would be one AOC with all SAR control forces operating out of it.¹⁰

This same controller indicated that considerable difficulty was experienced in obtaining forces to participate in the SAR effort and in establishing adequate communications to prosecute search missions:¹¹

We stood around trying to find out what was going on and we decided nobody knew anything about what forces were available or what the concept of SAR was going to be. We contacted the first Army helicopter company to be in-country there at Saigon and talked to them about it, they said they would be glad to help us on an availability basis.

Initially, we didn't have anything, except we had some field phones . . . but we couldn't get any direct lines . . . so we contacted the Army about this and told them we needed some way to get ahold of them, so they strung a wire and said all you need to do is get a field phone . . . and we were the only persons who had direct lines to anybody. The only reason we got it was that we didn't go through the Air Force priority system of trying to get telephones

The equipment and communications problem will be discussed later in detail. These candid statements reflect, in fact, the impact of

the situation on the controllers. It should be noted that these comments have been mellowed by the years, advancement in rank, and ever-increasing staff responsibility for the personnel interviewed. However, the harsh fact remained that ARS controllers, trained to operate a SAR control network, found themselves with no network, little or nothing to control, no Rescue channels to appeal to, and for intents and purposes -- no SAR control mission. They, therefore, improvised at the working level, in an attempt to establish a workable system. The Vietnamese had their own rescue center setup in operation. Det 3 coordinated with the Vietnamese with respect to establishing a written agreement as to how the two SAR factions could work together, i. e., help that could be expected from other agencies, availability of their communications networks, etc. Det 3 spelled out everything that was required for a SAR agreement with the Vietnamese and reiterated that they wanted this to be a formal document. Det 3 also worked with Air Force MAAG, although they were in a rather untenable position with respect to getting things done. They were physically controlled by 2d ADVON -- were actually not operating under Rescue, for that matter did not have any designation of a rescue unit -- they were just members of the 2d ADVON AOC. One ARS controller, assigned to the AOC during this period, summed it up this way:¹²

We had no contact . . . or no way to go to anybody to make any kind of agreement other than for the AOC. Not

for Rescue . . . we used the facilities within the AOC . . . We had none of our own . . . As a matter of fact we didn't even have a separate office. We had a desk at the Combat Control Center . . . We had a couple of desks put together where we could sit down and work while on duty. Again, we didn't control any of the missions that actually took place. We recommended to the senior AOC officer on duty there, or the Operations Officer, what we needed done and this sort of thing and he would have to direct Bien Hoa to supply airplanes . . . everything had to be coordinated through the AOC Commander. We were not operating at all like a SAR center.

Det 3 was insistent that any U.S./Vietnamese SAR agreement be a formal document because it would be the most basic single SAR control agreement, and the legal basis for U.S. SAR authority in SEA.¹³ As far as could be determined, the 2d ADVON had no SAR authority in SEA. The Vietnamese possessed the international authority and the U.S. authority had been vested in 13th AF by Pacific Air Force (PACAF) who had, in turn, been designated by Commander in Chief, Pacific (CINCPAC). However, no agreement, memorandum, regulation or other authority could be found, or was implied, which named 2d ADVON as the U.S. SAR agent for Vietnam. Authority for SEA SAR was exercised by the 13th AF JSARC which was operated by Det 2, PARC, at Clark AB, P.I. The initial SEA SAR control function, therefore, by being assigned solely as a function of the 2d ADVON AOC, and without link to the professional rescue management, was isolated and without authority. On 23 March 1962, a MATS S.O. was published

which established Det 3, PARC, effective 1 April 1962. This order was cited by the Contemporary Historical Evaluation of Combat Operations (CHECO) report as the dawn of SAR forces in SEA. It was the first ARS unit and the first official act to recognize the need for a professional SAR control capability complete with planning and management. However, the die was cast, and ARS SAR Management and Programming would not appear for months to come.

Documentation regarding the personnel actions to man initially the detachment was virtually nonexistent; however, it can be assumed that certain coordination between Hq MATS and Hq ARS was necessary to effect the publication of the Det 3, PARC, activation order. It follows then, that personnel plans to man the proposed detachment should have chronologically followed the same order of progression as the staff actions which precipitated the S.O., particularly, since the order specifically directed that "manpower authorizations in personnel will be furnished from forces under control of Commander, Air Rescue Service." ¹⁴

Personnel actions, in some instances, were not timely as evidenced by the short deployment notice provided the Det 3 Commander: ¹⁵

I had been scheduled to take leave during June 1962, however, on the night before I was to sign out, the phone rang and I was told that a PCS assignment was pending, therefore, I would have to cancel my leave.

Assignment of the SAR control responsibility to MATS/ARS was not timely. In fact, the Commander of Det 3, PARC, who on 2 July 1962 assumed the SAR control duties of the previous TDY force, indicated that "Det 3, acting for the 13th AF Commander, had the SAR responsibility for the Saigon, Bangkok and Rangoon FIR's." ¹⁶

It was immediately recognized by the Det 3, PARC, Commander that the Commander, 2d ADVON, had no legal U.S. SAR authority. The authority had never been transferred from the 13th AF at Clark AB to the Commander, 2d ADVON. Therefore, Det 3, PARC, had to act for the Commander, 13th AF, in order to have legal international SAR status. Stark contrast to the TDY personnel who had been instructed to establish a SAR network for the Commander, 2d ADVON, while being advised they had no responsibilities outside of the 2d ADVON AOC. These vital and basic conceptual misunderstandings and oversights were made doubly critical due to the pressure of the SAR operational need. The first Det 3 Commander lost no time in becoming operational: ¹⁷

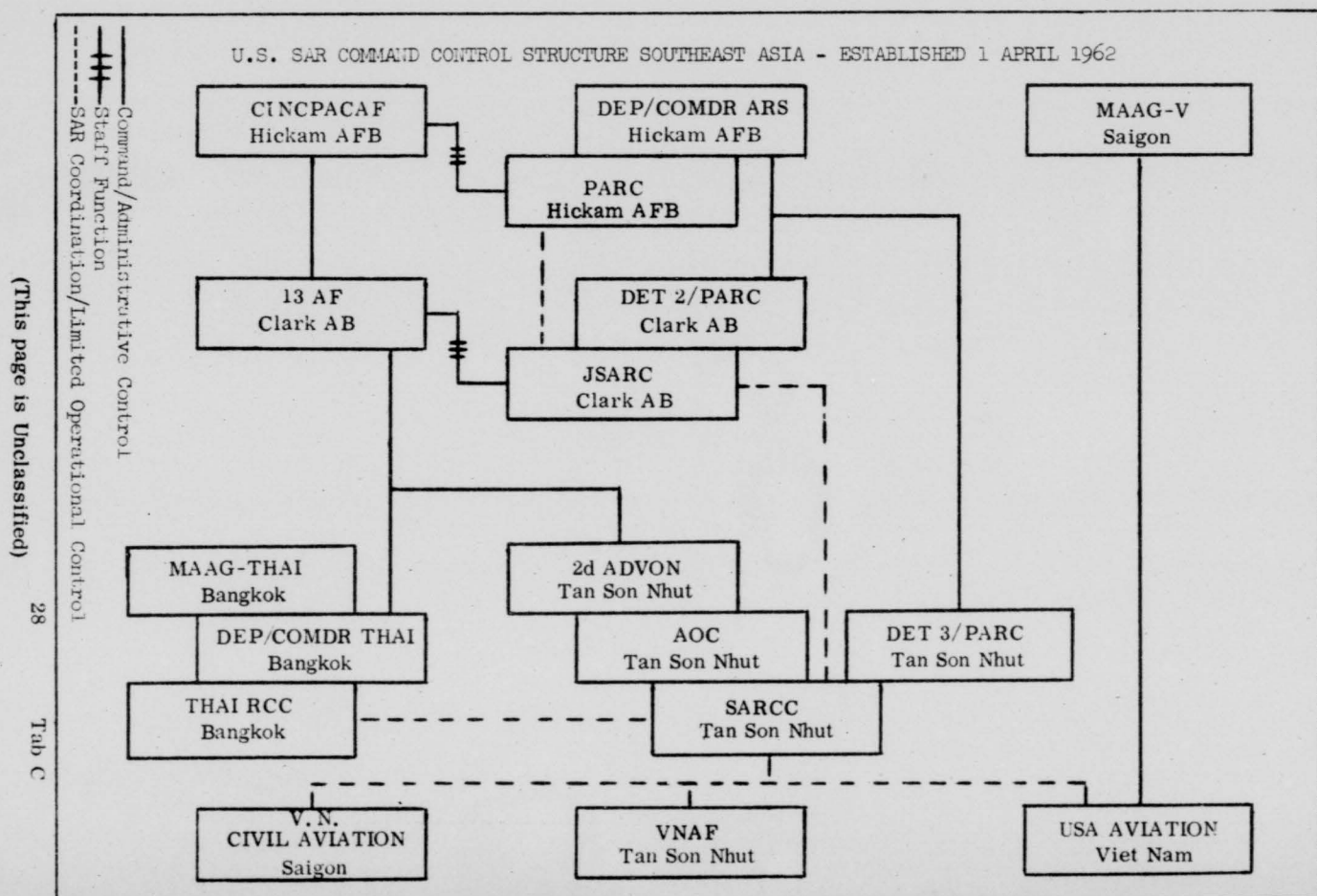
A mission was in progress when I reported for duty and with only a clerk-typist present, Det 3 became operational immediately. The remainder of the initial cadre assigned to the SARC were not familiar with SAR Center responsibilities. After a long period of interrupted OJT these personnel were finally qualified.

It can be seen that the ARS SAR control force placed in SEA started

from zero in the summer of 1962. In fact, due to the realignment of understanding within the 2d ADVON AOC complex and the day-to-day missions in progress, they were at a disadvantage which was produced by the tardy injection of MATS/ARS command, control and programming.

From 1 April 1962 through the end of 1964, the SAR control task did not vary, although many changes were brought about in the structure and organization of Det 3, PARC, who operated the SARC. Since Det 3, PARC, was a causative influence on the control function which it operated, the Det 3, PARC, tasks will be dealt with under the AU format of "Additional Considerations."

The SAR coordination/SAR command and control structure which developed after the activation of Det 3, PARC, indicated the organizational structure existed for a complete SAR control capability; however, SAR agreements, formal memorandums, and support agreements were yet to be promulgated. (Ref Tab C) Of the many organizational changes made during the SEA conflict, none effected any changes in the SAR control task after the introduction of Det 3 in mid-1962. So, in the early winter 1962, 13th AF, at the request of the ARS SAR Control Detachment Commanders, published the regulation which vested the U.S. SAR authority for the SEA sub-region in the Commander, 2d ADVON. That regulation made legal the U.S. forces' side of the Vietnamese Joint General Staff (VNJGS)/Commander, United



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States Military Advisory Command, Vietnam (COMUSMACV) Joint SAR Agreement since the Commander, 2d ADVON, was the Air Component Commander under COMUSMACV.¹⁸ It should be noted that the Pacific Theater U.S. SAR chain of authority was through CINCPACAF and Commander, 13th AF, to Commander, 2d ADVON. With the publication of these documents, appropriate SAR authority/control lines were drawn. The chronological change and heritage of the SEA SAR control agencies are depicted in Tab D. The presentation shows the evolution of the command and control elements and does not specifically follow the various command, control administrative lines of authority.

d. WHAT WERE THE CONSTRAINTS?

The constraints applied to SAR and SAR control, from the start of the U.S. national involvement in SEA, were closely related to the total effort. The covert efforts prior to 1962 were maintained at the minimum participation level possible. SAR support for those early covert actions was planned, controlled and supported without ARS participation. The covertness was itself a constraint as far as ARS SAR support. The commitment, short of actual combat forces, was the subject of many restraining influences. In addition to the Geneva Accords, there were other considerations: the alienation of the Vietnamese people, relations with other SEA nations, and the vulnerability to charges of aggression in SEA.¹⁹

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The semi-covert JUNGLE JIM/FARMGATE level of U. S. participation required the introduction of trained personnel from ARS. The immediate constraint of the late 1961 early 1962 period was the degree and level of overt U. S. participation. U. S. involvement was politically complex and many projects necessarily hung by thin threads of decision.²⁰ It appears from various sources that extreme effort was directed toward minimizing the numbers of U. S. personnel involved, and that a conscious effort was made to locate all USAF military authority, responsibility and capability in one compact operational command, 2d ADVON.

Far-reaching deficiencies were generated in 1962 by the fact that Hq ARS and Pacific Air Rescue Center were not adequately involved in programming for the U. S. SEA forces. Covert activities and the new semi-covert activities during late 1961 and early 1962 apparently served to block the flow of programming and requirements information to ARS and PARC. The ARS detachment formed on 1 April 1962 utilized exactly the same numbers of personnel as the TDY support for the 2d ADVON AOC. Therefore, placing a MATS/ARS detachment in South Vietnam (SVN) did not mean increased numbers of personnel. Since increased numbers were not involved, some other rationale must have blocked the 2d ADVON SAR control capability from developing in the same mold as all other SAR control functions in the Pacific Theater. Minimizing the number of units deployed

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to Southeast Asia, and the involvement of additional headquarters, in order to avoid the implication of a large U.S. force structure, may be close to the rationale utilized. It should be recalled, however, that the overt U.S. objective was to provide the Vietnamese Air Force (VNAF) with such training as would eventually enable the Vietnamese to perform all required missions.²¹

Research reveals no record of any official effort on the part of U.S. forces directed toward development of a Vietnamese SAR capability. Many flying advisors to the VNAF units probably had ARS operational background. The VNAF had the Vietnamese SAR control responsibility since the Joint Vietnamese/U.S. Search and Rescue Agreement, consummated during late 1962 and early 1963, defined the Saigon SARC as "operated by the VNAF Air Tactical Control Center (ATCC) and located in the AOC."²² However, the first TDY SAR controller recalled of the VNAF SAR Center, and the USAF SAR controller's involvement with them, as follows:²³

We were instructed that we were there as advisors to them, and we would have counterparts and we would train them or work with them in the event of a SAR mission . . . but not to go to their center. We worked out of the 2d ADVON and their AOC people would contact their SAR center.

The 2d ADVON SAR personnel set up a SAR Control Center within the 2d ADVON AOC and asked the Vietnamese to join it. They did not enter

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the Vietnamese SAR Control Complex and attempt to set up a joint operation within the framework of the established Vietnamese SAR network. During the 1962/1963 period, the only airborne SAR forces available were VNAF and U.S. Army operational units. Although some efforts were made to coordinate with the established Vietnamese SAR control function, the U.S. control function was not able to utilize effectively the Vietnamese system. Other efforts were made to bring the Vietnamese Armed Forces and Vietnamese SARC into the 2d ADVON JSARC complex.

One of the assigned ARS controllers stated:²⁴

There was a time when we did have representatives from the Army of Vietnam, the Vietnamese Air Force and Vietnamese Navy, but this only lasted a short time. I don't know why, or have any background on this; however, I know that from then on we were basically operating without continuous contact with the Vietnamese SARCC.

Therefore, a constraint on the early U.S. SAR control effort was the absence of a SAR control advisory effort through the overt USAF/MAAG structure. The Vietnamese had the SAR responsibility, they had an established SAR Center, and they had an established communications system. The effectiveness of the established Vietnamese SAR control system was of little concern at this time. Highly germane, however, was the fact that there was no evidence of any successful integration, or cooperation with the Vietnamese SARC. Management, control and supervision were, therefore,

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totally separate between the Vietnamese and U.S. efforts, except for sporadic individual coordination.

Discussion of early SEA SAR control task and the constraints thereon, must include a view of "SAR in covert environments." The degree and contemporary concept of covertness necessarily affected every decision in the early SEA years. There was considerable discussion concerning the appropriate role of ARS as a military and civil, national and international agency. After the Korean War, ARS was designated as a peacetime SAR force by the United States National SAR Plan, which discouraged viewing ARS as a combat force. During that post-Korean period, the ARS Commander was variously designated as a USAF SAR agent; as a U.S. SAR agent; and ARS international SAR operations were cloaked in a veil of internationality. ARS operational foreign clearance procedures were held to have special status, engendered by international SAR responsibility. Because of the effects on U.S. international SAR agreements, it was reasoned by some that ARS could have no participation in the covert activities of the United States. It was true that U.S. SAR aircraft were authorized to enter many foreign nations without regard to the normal restrictions imposed by those individual nations. However, for all of the above mentioned reasons, great judgment had to be exercised in the use, deployment and mission assignments of ARS aircraft. The restrictions would then appropriately deny the use of a

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SAR force as a cover for covert operations.

As yet unresolved was the propriety of utilizing a military SAR force within a covert operation. The corollary question also existed; was employment of SAR forces to perform covert operations acceptable, providing they did not use SAR as a cover? Since March 1965, when the USAF Wartime Guidance Document assigned the combat recovery mission to ARS, the role of Rescue as a combat force was without question. The combat mission and the U.S. international SAR commitments were, therefore, vested in the same command.

During 1961-62, the ARS role in SEA, as a product of the semi-covert JUNGLE JIM/FARMGATE exercise was, therefore, subject to valid doctrinal concern. The questions generated and deliberations entered into, during the 1961-63 time frame, resulted in the revision of the USAF Wartime Guidance Documents, AFR 30-54, AFR 23-19, AFM 2-36 and eventually, the name change from Air Rescue Service to Aerospace Rescue and Recovery Service (ARRS) which occurred in January 1966.

The aforementioned limitations could be considered as resultants of the ill-advised removal of the combat recovery responsibility from the ARS Mission Statement and the Wartime Guidance Documents. Without that wartime mission assignment, ARS organization, doctrine, policy and equipment

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unavoidably sagged into peacetime lethargy. Regardless of the rationale advanced, and in spite of the efforts of the withering ARS staff planning and programming functions, ARS equipment and structure barely survived. A maximum staff effort was necessary in order to maintain ARS existence during the pre-space flight/SEA period. With such an immediate history, there was little wonder that ARS programming support for SEA, during the 1962-63 period, was less than all-encompassing. Combat recovery procedures and combat recovery/rescue programming plans were nonexistent. "Everyone" remembered the exceptionally successful combat aircrew recovery effort that was made in Korea; however, even those individuals who served in Korea that happened to be still assigned to ARS could not recall the intricacies of Aircrew Recovery (ACR) management, procedures and techniques.

Most significantly, no effort had been expended toward the retention and modernization of the wartime SAR capability. Each group of JSARC controllers reported that they were not trained; had to discover for themselves the procedures and techniques; or could find no written guidance. Yet, each group also reported significant progress in written procedures/agreements/ development of ACR doctrine, etc. A review of the reports from the JSARC personnel indicated that an unacceptable percentage of the accomplishments lacked permanence and had to be reaccomplished. More

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than insufficient planning; more than inadequate training, more than ineffective staffing; and more than inadequate equipment or procedures; ARS did not possess the authority to maintain even a rudimentary combat ACR programming skeleton, i. e. , no Wartime Mission Clause.

The single most significant and pervasive constraint inhibiting the U. S. SAR control effort in the 1961-64 time frame was the inverted U. S. military mission statement. Because of that statement and inevitable peacetime austerity, USAF did not have a tactical SAR skill; in fact, USAF did not have a store of combat aircrew recovery doctrine, tactics or requirements. Nonexistence of expressed doctrine or validated requirements produced the void into which the early SAR control force stepped.

e. WHAT WERE THE EXPECTED RESULTS?

Since the task assignment was not clear and the SAR control organization did not follow established practices, it was difficult to perceive exactly what results the SAR authorities expected to achieve. It might easily be said that their results were exactly what had evolved in the SAR coordination/control system from its beginning in early 1962. However, none of the required documentation, authorities or guidance was provided to the first TDY controllers. The 2d ADVON Commander had military SAR responsibility and authority for those forces under his command as an inherent part of his military authority. However, forces under his command

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were JUNGLE JIM/FARMGATE, which were secondary SAR forces and possessed no actual rescue or recovery potential.

Without documentation to indicate the expected results, it must be assumed that the SAR control force was expected to perform the same functions performed by other SAR control elements within the PACOM. To better understand the SAR control structure, which would have to be utilized and emulated at the 2d ADVON level, a brief examination of the SAR system existent in the PACOM at the start of 1962 is provided.

The Secretary of Defense designated certain Defense Department officers as Unified Commanders of specified areas where U.S. forces were operating. Wherever such commands were established, the Unified Commander, as the regional SAR coordinator, had the responsibility for coordinating and, as appropriate, controlling military and civil SAR within his assigned Unified Command area of responsibility. In accordance with the Joint Chiefs of Staff (JCS) Pub 2, Unified Actions Armed Forces Area Commanders had the responsibility and authority to establish Joint SAR Centers (JSARC). Their functions were direction and coordination of all SAR operations within their respective areas of responsibility. By definition, a JSARC is an installation normally staffed by supervisory personnel from all participating Services, possessing sufficient facilities to direct and coordinate all available SAR facilities within a specified area. When a Service participates

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in the operation of a JSARC, that Service should provide sufficient personnel to insure adequate manning of the component SAR controller position. Each Service Component Commander exercises control of his assigned SAR forces through his component SAR controller when his forces are committed to joint operations under the overall direction of the JSARC.

The SAR system, established in the Pacific Command (PACOM) area and in the PACAF area of responsibility, was not organized as simply as the broad guidance would indicate. USAF (MATS/ARS) was assigned the responsibility unilaterally to man, equip and operate the JSARC's located within the overseas region (that area of the globe which was not included in the inland or maritime regions). Sister Services did not jointly man JSARC's in areas where joint SAR operations were conducted. In the Pacific, CINCPAC, as Unified Area Commander, was designated the Military SAR Commander and Civil SAR Coordinator for the PACOM. In turn, CINCPAC divided his area into regions and delegated certain SAR authority and responsibilities to the Commander in Chief, Pacific Fleet (CINCPACFLT) and CINCPACAF. In this respect, CINCPACAF was delegated the authority and responsibility to function as Military SAR Commander and Civil SAR Coordinator for the Pacific Overseas Region. The Pacific Overseas Region encompassed the western Pacific Ocean and was further divided into the Western Pacific Sub-region and the Southwest Pacific - Southeast Asia

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Sub-region. CINCPACAF, while retaining the SAR Commander/Coordination authority, assigned to Commander, 5th and 13th Air Forces, the responsibilities for coordinating SAR activities within their respective areas. In retaining SAR Commander/Coordinator authority, CINCPACAF also retained the authority to assign mission commanders/coordinators who ultimately were responsible for the coordination and control of specific SAR missions. Further, CINCPACAF also retained SAR mission control of all primary USAF SAR forces assigned in the Pacific. The operational control of primary ARS forces was exercised through the PARC Commander who was also the Staff SAR Officer for Headquarters PACAF.

Therefore, while it must be assumed that the expected result was for the 2d ADVON AOC to coordinate/control SAR activities of the U. S. forces in SEA, there was no correlation between the existing PACOM SAR system and the resources and organization of the 2d ADVON AOC. When Det 3 was established under PARC, it could have been delegated the operational control authority for primary SEA SAR forces by PACAF through PARC. However, there were no primary SAR forces assigned to SEA at that time. During early 1963, the 13th AF Commander redelegated the SAR coordinating responsibility for the Southeast Asia Sub-region to the 2d ADVON Commander. In early 1963, one year after the SAR control entry into SEA, the most basic SAR authorizations were available as the basis for valid

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inter-Service and/or international SAR agreements within the Southeast Asia Sub-region. When the 2d ADVON Commander was assigned U. S. Military SAR Coordinator authority, it could be reasonably assumed that the 2d ADVON JSARC was expected to control/coordinate U. S. SAR efforts in the name of the 2d ADVON Commander, within the Southeast Asia Sub-region.

f. WHAT WERE THE ACTUAL RESULTS?

The following illustrated and validated narrative should acquaint the reader with "how it was" in the early SEA JSARC. The Tactical Air Control Command, 2d ADVON AOC arrived in Vietnam in late 1961 and early 1962 in what was essentially a bare environment. Three ARS officers and one airman were assigned TDY to Tan Son Nhut AB, Saigon, RVN. Two of the officers were withdrawn from the PARC unit at Clark AB and one from the 33d ARSq at Naha, which also provided the airman. Because the initial force was assigned in a TDY status, support was, of necessity, derived from the parent unit. Administrative supplies, desks, office equipment, furniture and communications equipment were in extremely short supply.

Even after the arrival of dedicated SAR forces in 1964, facilities and communications remained as the major problems confronting the SAR control effort.²⁵

Det 3 coordinated all its business within 2 adjoining

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8' x 10' "broom closets." During quiet periods, 2 people ran the operation, however; during peak periods, especially during an actual recovery mission, 4-6 people had to operate within these cramped quarters. . . .

Land lines and radio sets were in critical supply, resulting in overloading and long delays in traffic. . . .

Timely SAR efforts were hampered by poor communications, lack of a system of filing flight plans and passenger lists, and lack of an adequate flight following capability. More often than not, a search would not be initiated until after an aircraft failed to return in the evening which, of course, reduced the possibilities of recovery.²⁶ The JSARC did not have any other way of knowing about many SAR incidents in those early days, except by notification from the agency controlling the aircraft; i. e., the Army, Navy, VNAF or United States Overseas Mission (USOM). In many cases, the parent organization was notified at the same time as the SAR Center. In other words, the aircraft may have taken off at 0800 in the morning without filing a flight plan and, if not scheduled to return until late afternoon, there possibly would be no indication of trouble until after the aircraft failed to return to home base or fuel exhaustion limits had been reached. Frequently, however, fuel exhaustion limitations could not serve as a basis for launching a SAR effort, since aircraft often were programmed for refueling at remote sites which did not have communications with the parent units.²⁷

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The Search and Rescue Control Center, as it was originally deployed and structured, lacked the network to control missions centrally. The personnel were, therefore, forced to employ techniques radically different from those in use today. Most successful recoveries were made by ground troops or rotary-wing aircraft which, by coincidence, happened to be in the immediate area of the incident. In these cases, because of its limitations, the JSARC was precluded from participation in the mission. The JSARC would open a mission when an immediate rescue could not be effected, which meant that the crash site was usually unknown or in rugged and/or enemy held terrain. It also indicated that the chances of recovering survivors was relatively small. Nevertheless, it was imperative to locate and examine the downed aircraft to determine the status of the crew and the cause of the crash. Therefore, the JSARC Chief, or one of his controllers, along with a radio operator, a photographer and possibly, an ordnance disposal team would proceed to the crash scene by Army or Marine helicopter, USAF C-123 or any other available means, and assume duty as On-scene Commander (OSC). Locating the scene of a crash, and then getting into it, often proved to be extremely difficult. In the mountainous terrain and multi-canopied jungle forests of Southeast Asia an aircraft could easily be swallowed up and leave no trace for searchers. When the plane was located, the rescue party would find or cut a clearing for a helicopter landing or work its way on foot. Without Pararescue personnel or helicopters equipped with hoist cables,

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it was usually impossible to make immediate entry into the crash site. Quite often, the site was found to be insecure and Army, Republic of Vietnam (ARVN) troops would have to be transported in by helicopter or march in on foot. Sometimes, as much as an infantry battalion had to be committed in order to make the search area secure enough to probe the crash site. If there were no survivors, the search party removed the remains of the crew and portions of the aircraft which would be of value in determining the cause of the crash. They then destroyed anything in the wreckage that might be of use to the enemy.²⁸

When air and ground reconnaissance failed to locate a crash site or the pilot, leaflet drops were employed as a last ditch effort. The following description of one such effort can be found in the CHECO Report, USAF Search and Rescue in Southeast Asia (1961-66) (pp. 4-5):

... in the spring of 1964 in a wild area of Thua Thien Province, along the Laotian border southwest of Quang Tri. Two pilots crashed in an unknown location in a USAF TO-1D. Montagnards reported that they had seen a smoking airplane in a particular area, but a methodical and extensive air search, as well as a ground search by 150 U.S. Special Forces and ARVN troops, which lasted several days, failed to produce the slightest trace of plane or crew. The search was suspended, but 200,000 leaflets, printed in Vietnamese and French by USIS, were dropped in the search area. Since the Geneva Convention prohibits the offer of money for human beings, VN \$35,000 was offered for information which could aid in the recovery of a "green American mono-plane," with the pilots alive. VN \$17,500 was offered if the plane

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was found and the pilots were dead. Thus, the leaflet legally circumvented the ban and provided an incentive for keeping the pilots alive. The U.S. Special Forces spread the message by word of mouth.

Several months later, a Viet Cong defector disclosed that a light plane had been shot down in the same period as the TO-1D, but in a different area. Another 100,000 leaflets were printed and dropped. The leaflets in this case gave little promise since the area was rugged, sparsely populated, and the tribesmen were generally illiterate. Neither these leaflets, nor others that were dropped, have succeeded in leading to the recovery of a pilot or plane. . . .

This incident served to illustrate the varied concepts used during the early phases of SAR activities in Southeast Asia. To preclude confusion, all future references to the SAR center will be addressed as JSARC, excluding quotes. The JSARC terminology was certainly a misnomer during this time period, as there were no Army, Navy or VNAF personnel permanently assigned and little effort was expended in obtaining VNAF participation. Sporadically, there were U.S. Army personnel identified as contacts for SAR missions; however, these personnel varied widely as to reliability and capability. Normal personnel rotations and reassignments caused many changes in the Army command structure; therefore, an individual stationed at an outlying base, identified as a SAR contact one month, might not be available the next. During the fall of 1963, MAAG-V which subsequently became the Military Advisory Command, Vietnam (MACV),

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was not too involved with SAR or its operation. The Army continued to furnish contact names, but very little staff contact or direction was provided to the SAR forces. This, in spite of the fact that mission records indicated that a disproportionate share of the SAR effort was expended on behalf of Army losses.

During 1961 through 1964, the "advisor" cover was being maintained by all Americans located in SEA, which may have accounted, to some degree, for the low level of MACV staff support of SAR activities. However, the USAF/Army doctrine was basically dissimilar to USAF management doctrine. It appears germane to this study, therefore, briefly to explore U. S. Army SAR/Rescue/Air Evacuation concepts. The following information concerning U. S. Army SAR concepts and equipment was extracted from a section of the Air University Study #7 which was authored by a U. S. Army pilot and staff officer:²⁹

In South Vietnam, prevailing military environmental and operational conditions dictate the use of helicopters and light fixed-wing aircraft as the primary means for medical evacuation and crash/rescue missions

.....
The first helicopter ambulance unit was deployed to South Vietnam in April 1962. By the start of CY '65, a total of 10 Army Medical Service helicopters were in the theater

.....
The only helicopters recognized and utilized for Army air crash rescue support up until the present have been four of the twelve organic helicopters of the 15th Medical Battalion, 1st Cavalry Division

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.....
The comparative roles of the Army and the Air Force for aeromedical evacuation are clearly defined in Joint Chiefs of Staff (JCS) directives. The Army has the responsibility to evacuate Army patients from the forward areas to medical treatment facilities within the geographical area of the combat zone. The Air Force has the responsibility of moving patients from the combat zone to rear area medical facilities Of course, the Air Force is also primarily involved in the rescue of its personnel from its aircraft downed in either North or South Vietnam or at sea, involving a separate set of operational concepts

.....
Stationed throughout South Vietnam, "Dust-off" helicopters normally are employed under an area support concept which offers flexibility in providing general support of all units operating in the area. Their sole mission is to perform aeromedical evacuation, and they respond immediately to all requests for rescue
The concept of area support does not preclude the use of a portion of the "Dust-off" capability within an area in direct support role of a ground unit engaged in a particular operation. In particular, a direct support role has proven effective during the initial stages of combat assaults when casualties may be expected.

The U.S. Army concept provides for "direct support" or temporary "organic assignment," which can remove aircraft from availability for general SAR response or preempt SAR aircraft use by field commanders with very limited knowledge of the overall tactical or SAR situation. It did provide for maximum response to med-evac situations: 30

Air evacuation by any available Army helicopter augments the capability of the "Dust-offs." In critical life-saving situations, any helicopter immediately available on the scene, even senior commanders' command and control helicopters, are utilized

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.....
There is no standard Army doctrine in these matters. The operational concept can be said to be a matter of expediency and judgment and, on the part of those concerned with respect to the employment of whatever helicopters are available in any given situation, further generalization is not possible.

It can be seen that U. S. Army doctrine, which basically supports the foot soldier, subjected the aircraft to control at the lowest possible level, so as to insure dedicated support for the field tactical commander. Depending upon each employment situation, the tactical commander could range from the Company to the Brigade level. The impingent effects of the U. S. Army's decentralized aircraft management doctrine was threefold:

(1) The JSARC was required to utilize or duplicate existing Army aviation command communications in order to contact the operational authority for the use of Army aircraft.³¹

..... No one knew from one corps area to the other corps area how to contact anybody We flew around in a C-47, C-123, or whatever else was available, we went to all the strips, every place they had an Army detachment . . . we drew up a communications diagram of how you could contact someone. We could go through the USOM net or you could go through the Army helicopter net or we could go through the ARVN Joint Chiefs downtown or the VNAF as they had their own net too

(2) The U. S. Army could not provide a single contact for timely command control/coordination of U. S. Army aviation aircraft. Each successive group of controllers (1961-64) reported that they contacted the

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U.S. Army and U.S. Navy for responsible participation in the SAR network. The U.S. Army was reported to have, "provided contact personnel," and assigned, "liaison officers" to the SAR control center. One ARS controller succinctly summed up the benefits derived from this Army effort:³²

The U.S. Army was the bane to our life as SAR coordinators. They traditionally, and to a large degree operationally, are much looser than we in command and control We developed a formalized field visit program During our visits we would upgrade our files on names and phone numbers of contact personnel, types and numbers of aircraft Our files on Army aircraft were always much more up to date than the Army Liaison officers'.

(3) Since the U.S. Army doctrine detaches aircraft from aviation companies or assigns aircraft to field commanders, there was no centralized continuity of operations control as envisioned by USAF doctrine. Flight plans, flight following and constant supervision by a centralized control agency was not practiced. An early SAR controller recalled that, "it was almost the exception rather than the rule for an Army aircraft to file any sort of flight plan." ³³

The U.S. Army and USAF procedures for control of aircraft were not directly compatible, which resulted from an operational effect of the most basic USAF/U.S. Army doctrinal differences.

Despite repeated requests, U.S. Navy entry and coordination into

the JSARC function was not effected during the period of this report. U. S. Navy doctrine and SAR control activity will be discussed later in this package under the heading of "Additional Considerations."

The following is a description of the JSARC function as it was integrated into the AOC operations concept and generally used in Southeast Asia during 1961 through 1964. The Air Operations Center was a hub for almost all USAF and VNAF air operations. The various divisions in the AOC consisted of:³⁴

Combat Operations -- The only jointly manned (USAF and VNAF) Division operating on a 24-hour basis. Combat operations had both U. S. and the Vietnamese telephone contact with the Tactical Operations Centers (TOC) in the four corps areas, and with the various air bases. Combat Operations supervised pre-planned missions (frag orders) and scrambled alert aircraft (fighters and flare ships), for immediate SAR requirements. The JSARC was ideally located in the corner of the Combat Operations Center which permitted SAR controllers to watch missions in progress and monitor status boards which contained aircraft "availability" information.

Strike Plans -- This Division was jointly manned and operated ten hours per day. They were tasked to draw up the frag orders which supported daily field requests for tactical strike aircraft, flare ships and reconnaissance. Mission frag orders were usually dispatched at 1800 hours for the next day's mission activities.

Intelligence -- This Division was jointly manned and operated eight hours per day. They provided information on Viet Cong movements and situation estimates when aircraft were shot down.

Airlift -- The Airlift Division was jointly manned 18 hours per day and USAF manned 24 hours per day. They coordinated and directed the airlift of materiel and personnel within Vietnam as well as JSARC requests for search aircraft, med-evac missions and flare ships for night rescue.

Reconnaissance -- This Division was jointly manned eight hours per day. They coordinated and directed all "in-country" reconnaissance missions. From time to time, special reconnaissance requirements were necessary to support rescue/recovery missions.

Administrative -- This Division was manned with USAF personnel eight hours per day and supported the AOC Divisions with filing, classified material control and clerk-typists. The SAR Control Center required very little assistance from this Division as they had their own files, classified control and clerk.

Communications -- This Division was manned eight hours per day and additionally, as necessary. Their function was to receive and transmit all teletype messages.

The location of the JSARC in the Air Operations Center was certainly ideal, as all operational functions were within about 25 steps of the controller's desk. The year 1964 found almost all military activities in Vietnam increasing in scope. With the military activity buildup, it followed that the activities within the Air Operations Center would proportionally increase; therefore, collocation within the Combat Operations Division became a disadvantage to the JSARC. Two or three missions in progress at the same time generated too much noise and confusion. This increased activity required the AOC to be increased in size when it was moved to a new and larger building. The additional space allowed for integration of a Weather Forecast Division into the AOC which, as far as

SAR activities were concerned, proved to be beneficial from the planning standpoint. The JSARC was allocated two 6' X 8' offices, one for the commander and clerk-typist and the other for the SAR controller's use.³⁵

The entire size of the Air Operations Center was approximately 28' X 25', and it was possible to have several strike missions of both the USAF and VNAF being coordinated at the same time. One residual benefit of the larger AOC activity was that in the late spring of 1964, an Army aviation office was established within the Strike Plans Division. The activation of this function helped the JSARC considerably, even though it was only manned eight hours a day. Previous to this, a desk had been made available for an Army Liaison officer in the AOC, but it was not occupied most of the time. Therefore, little SAR coordination assistance was available from the Army.³⁶

Of necessity, SAR operations were conducted, utilizing previously proven techniques. It should be noted that these techniques were developed during an era which was overshadowed by the withdrawal of the Wartime Mission Clause from the overall ARS Mission Statement. Therefore, until they "learned better," the initial cadre of personnel, practically speaking, were forced to operate under the concept that "wartime SAR was merely an extension of the peacetime SAR effort." An officer controller who arrived

in July 1963 stated: ³⁷

. . . there was little written guidance other than a looseleaf notebook with some SOP's. Actually during this time, there wasn't much real need for sophisticated written directives, and in cases as will be pointed out later written agreements were not extensive and could have been extremely difficult to staff . . . there were no ARS aircraft stationed in SEA until May 1964. In fact until the summer of 1964 there were relatively few USAF aircraft flown by USAF personnel . . .

In 1963, USAF "Advisors" flew with the VNAF pilots in several different types of aircraft. The U.S. Army had not committed large ground forces; however, they did have a large number of advisors with the ARVN and some specialized small units. The Army aviation units were in the process of introducing the Huey (HU-1B) helicopters which were to replace the worn-out H-21's. The U.S. Marines, during this time frame, were almost exclusively in the I Corps area and, therefore, had a full squadron of H-34's at Da Nang. One officer assigned to the SAR Center in 1963-64 ³⁸ summed up the situation with the following question:

So how did a JSARC function without rescue aircraft and few experienced people? Much the same way rescue centers operate now and in 1963 in the CONUS - Beg, Borrow and Steal.

There were generally three topics, or categories of missions being conducted during this time frame: ³⁹

Medical Air Evacuation -- This has always been accorded a very high priority to Americans in any situation, especially in Vietnam where climate allows infection to spread easily. The U.S. Army 57th Medical Evacuation Squadron, utilizing the call sign "Dust Off," flew out of Tan Son Nhut. Procedurally, when the JSARC received a request for "med-evac" from the AOC, Combat Operations Division, TOC or some unit that could reach the JSARC by phone, certain basic facts were obtained such as: exact location, status and number of the injured, availability of a landing zone, security of the landing zone and nationality of injured personnel. If the injured personnel were United States forces, the request was passed to "Dust Off" operations via the direct phone line. If the mission was accepted by a "Dust Off" squadron, the AOC would obtain fighter escorts and strike aircraft from Combat Operations, particularly, in the case the proposed landing zone was termed "insecure." For night med-evac missions, flare ships were obtained from the Airlift Division of the AOC. If the request was for med-evac of ARVN personnel, the data was turned over to the VNAF senior duty officer in the Combat Operations Center or the VNAF duty officer in the Airlift Division.

Aircraft Crashes -- These occurred normally as a result of ground fire, pilot error or mechanical failure. In considering this SAR category, it should be noted that tactical aircraft rarely operated alone. Strike aircraft, whether piloted by USAF or VNAF pilots, were required to have positive direction from a Forward Air Controller (FAC), and were usually flown in pairs or in a four-ship formation. Therefore, when a tactical aircraft crashed, location was normally not a problem. In fact, at times, the on-scene FAC would divert or directly request helicopters to support the mission. The rescue and recovery, in these cases, would be effected without any action from the JSARC. Self-help was a way of life in SEA during this time period. This philosophy was the "name of the game" for Army helicopter assault missions, with the JSARC becoming involved only when trouble developed; i.e., hostile ground fire or darkness. With the exception of med-evac missions, Army helicopters rarely flew at night. The JSARC would, many times, learn of Army helicopter losses and crew recoveries after the fact. For the most part then, records concerning these losses were not kept. A log entry was made with the JSARC controller;

however, the traditional opening/closing reports were not dispatched.

Overdue Aircraft -- Aircraft in this category would be single-engine aircraft on liaison flights, reconnaissance aircraft which normally flew as a single aircraft flight, and transport aircraft. The Army's habit of not filing a flight plan caused one JSARC commander to launch a one-man campaign to improve the situation. His comments expressed the seriousness of failing to file vital flight information: ⁴⁰

. . . so by the time we in the JSARC were notified of an overdue U.S. Army aircraft, it was usually hours overdue, past fuel exhaustion, flight plan and destination many times hear-say. So as you can imagine, they were challenging. . . .

The following quote would seem to indicate that even under the best operating conditions, an accurate record of normal SAR events or aircraft crashes was rather sketchy during these early days: ⁴¹

When an aircraft or helicopter went down in a "hot" area, things around the JSARC got very hectic in a hurry. As mentioned before our office area was small and crowded, many people around to "see what goes on" and poor telephone communications all added up to pandemonium.

The typical life and daily activities of the SAR controllers, who operated the JSARC and attempted to discharge the responsibilities of Det 3,

have been recalled by a controller who was assigned from the summer of 1963 through the spring of 1964. His views and recollections were chosen since they coincide with the majority of the less detailed descriptions from other controllers who served during the same period: ⁴²

. . . the OIC and our Admin clerk worked about 10 hours a day, 5-1/2 days a week, being on call for missions at night and on weekends. The NCOs worked as equals in the SAR center with the officers. At first we tried working 8 hour shifts but this didn't allow enough off time for field trips, sickness, leave and R&R. So we tried two 12 hour shifts which proved too rough for the day worker as about 75% of our workload took place during the day shift. We finally settled on a 10 hour day shift and 14 hour night shift. Our work week went like this, two days on day shift, two days - nights, 2 days off and 2 days duty (for our base visits). My co-workers got around the country on various C-123 or C-7 (USA) airlift flights. I was fortunate being able to fly the U-3B on my off and duty days . . . which gave me very frequent travels throughout the country. This schedule held until June of 1964 when the controllers went on back to back shifts with everyone working as much as possible due to the workload.

It must be noted that the above work schedule provided approximately 186 man-hours/month plus those hours devoted to flying, briefing tactical aircrews and coordinating SAR activities on the "days off." The "back-to-back" shifts computed to 360 man-hours/month. While it can be argued that these computations were not validated by "work sampling" or did not account for standard deductions for lunch, coffee breaks, "get and get-ready" time, etc.; or that an additional man-hour load was expected in

a combat environment, these computations serve to illustrate "how it was," in fact, during the 1962-64 time frame.

Through to the spring of 1964, the SAR control function was operating with such facilities as were provided by the Tactical Air Component Commander. SAR control authority was tenuous and imprecise. The communications were common-use facilities, borrowed, installed outside authority, or not available at all. Rescue forces were secured on a lateral basis from whatever could be made available, since no dedicated, standby, or alert forces could be established. Many SAR missions were performed by those forces who happened to be in the area of the incident, and many incidents escaped detection and SAR action because flight following was not practiced. The grim outlook of these actual SAR control results was overcome by two general methods of operation:

Narrative resumes, End of Tour reports, etc. indicated that, during 1962-64, the pride of "self-help" or doing the best with what was available, and working long hours over and above controlling provided the basic necessities for SAR control. The system worked as well as it did due to the lateral and individual activities of the controllers themselves and not as a result of an established SAR control system or JSARC

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dedicated facilities and equipment.

The paucity of the equipment, communications and established ACR doctrine could not deter the accomplishment of the ACR mission. Certainly this was borne out by the first Det 3 Commander who indicated the inadequacies of equipment and facilities. He also pointed out that the accepted ACR doctrine at that time included deploying his personnel to the field to assist in controlling both ground and air searches. This, in some instances, included deploying with an attacking force to secure an area in which the SAR helicopters could operate.⁴³

During this period, the Deputy Commander of Pacific Air Rescue Center was observing the reported SAR control activities in SEA and recalled that:⁴⁴

In 1963 . . . the activity in Southeast Asia began to increase slightly. During this period of time . . . the Commander of Detachment 3 at Tan Son Nhut AB . . . made numerous trips into the "Brush" to recover human remains and/or aircraft parts which included machine guns, ammunition, and on some occasions portions of a center section of B-26 type aircraft for analysis to determine the reason for the crash. Although the majority of these missions were not true rescue activity, the Commander of PARC . . . condoned them on the basis that it was essential to determine if any of the crew members had survived the crash

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This "field duty" type of SAR effort was still practiced in 1964. On several occasions, members of the JSARC deployed to the field to act as on-scene commander for SAR missions.⁴⁵

It would be logical to assume that, when supporting ground tactical maneuvers in a conventional war, rescues of opportunity by rotary-wing aircraft would still predominate. The CHECO report stated that most successful recoveries were made by ground troops or fixed/rotary-wing aircraft in the immediate area of the crash. Recoveries made in the Republic of Vietnam (RVN) were generally in the immediate area of friendly troops; however, this did not necessarily hold true for Laos and certainly not for North Vietnam (NVN).⁴⁶

Apparently, PARC was not adequately aware of the communications limitations which effectively removed the SEA JSARC function from control/coordination of immediate response to rescue requirements. Since communications were exceedingly poor if the crash was not located immediately by chance, it "meant that the crash was usually in rugged and/or enemy held terrain." Since hours or days had passed since the crash, "it also indicated that the chances of recovering survivors was small."⁴⁷ ARS policy held that the rescue forces "must assume that immediate assistance is necessary." The corollary policy states, "the condition of survivors cannot

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determined through aerial observation alone."⁴⁸ These policies were virtually self-evident; and CHECO observed that, despite the poor SAR control system and/or lack of equipment, "it was imperative to locate and examine the downed aircraft to determine the status of the crew and the cause of the crash." It should be recalled that the USAF B-26's which formed the backbone of the early USAF air effort in SEA, were apparently failing in flight and disappearing into the deep jungle. This was noted in the CHECO report as follows:

" . . . when a series of B-26 crashes resulted in temporary grounding of the aircraft. The search and rescue forces were instrumental in determining the cause."⁴⁹

SAR missions, controlled by the JSARC, averaged six per month during the first half of 1964. However, 240 air crashes had occurred in SVN between January 1962 and June 1964. The potential for effective SAR activity existed, but manpower and facilities limited the 2d ADVON JSARC to controlling only six missions a month.⁵⁰

g. WHAT WERE THE ALTERNATIVES RELATIVE TO THE ALLOCATION AND/OR EXECUTION OF THE TASK?

Had a functional SAR control network and a dedicated SAR force been made available prior to 1962, the subsequent problems encountered in establishing a SAR network and foraging for a SAR force would have been

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largely reduced. The increase in SAR forces could have been more effectively paced with the tempo of the war. The alternatives then became manifold. Probably three major alternatives existed:

To have provided search and recovery and SAR control effort under the USAF MAAG-V program.

To have entered South Vietnam overtly with a humanitarian effort as a demonstration of national policy to assist and aid all nations/persons in distress.

To have introduced a SAR capability (control and forces) concurrently with the JUNGLE JIM/FARMGATE operation.

The initial USAF alternative was to assign the SAR control task and execution to the 2d ADVON AOC as an additional duty. In fact, during the time period January 1962 until the end of March 1962, the 2d ADVON assumed the SAR task for SEA. Personnel TDY from ARS Pacific resources actually performed the tasks, but the 2d ADVON abrogated the SAR authority from 13th AF and outside of the established Pacific Theater network. The establishment of Det 3 provided 2d ADVON with a professional SAR control capability and qualified guidance for the 2d ADVON staff and Commander on SAR matters.

Doctrinal differences between the USAF and the U. S. Army in the fall and winter of 1963 and 1964 pointed out another alternative. The U. S. Army desired total control of the low level tactical area of operation and control of all resources therein. However, the Army aviation doctrine prevented them from having the ability to integrate with a centralized SAR control system and, therefore, of being incapable of dedicated response to SAR requirements over a wide area of air operations. Since Army aviation served only the foot soldier and thereby responded in a very small area of operations in support of small units, the major part of the Army aviation capability was out of immediate contact with any central control net. These problems could have been resolved by the establishment of a central Army aviation control communications net; however, that would have subjected Army aviation to centralized control, dedication of aircraft to missions not in direct support of field commanders and could even have subjected organic aviation resources to control outside of the tactical field commander's control.

The alternatives were surely unreconcilable with U. S. Army doctrine; however, the JCS resolved the differences and awarded the mission of combat SAR to USAF. Control of forces is inherent in search and rescue; consequently, all forces involved in extended search activities were normally controlled by the USAF SAR control network.

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As an alternative to the introduction of USAF SAR forces, PACAF apparently had one choice in SVN and another in Laos. The Laos effort could have been prosecuted by Air America; however, for some reason, support for that effort failed to materialize. An answer may be found in the reasoning behind removing Air America pilots from certain combat flights. Over-expansion of the Air America operation was not deemed in the national interest by those agencies who were responsible.⁵¹

It can be assumed that any one of these alternatives could have drastically re-shaped the entire SAR effort in SEA.

3. ADDITIONAL CONSIDERATIONS: Concurrently, the Det 3 Commanders had been requesting introduction of ARS SAR forces into SEA. As early as the summer of 1962, the first Detachment 3 PCS Commander, soon after arrival in SEA, recommended that ARS personnel and equipment be stationed in SEA. Many subsequent requests were made for ARS SAR forces. Recommendations for the commitment of SAR forces, initiated in late 1963 by Det 3 and indorsed by 2d Air Division and PARC, were receiving staff consideration during late 1963 and early 1964. In support of these recommendations and requirements studies generated by PACAF/PARC/ARS, plans were developed to modify HH-43 helicopters for deployment to SEA as LBR/ACR vehicles. After the JCS directive that USAF would be responsible

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for SAR in SEA, USAF approved the deployment of three LBR detachments which would include six modified HH-43B's. However, these modified helicopters would not be introduced until October 1964 due to delays in the modification program.⁵²

On 29 May 1964, the 2d Air Division (2d AD) Commander requested he be given U.S. SAR authority for Laos and the authorization to utilize U.S. aircraft to prosecute the SAR mission in that country.⁵³ On 5 June 1964, he also requested the establishment of Detachment 2, 35th Tactical Group at Udorn, in order to control adequately the ever-increasing U.S. air activity over Laos. This detachment would serve as a vehicle to introduce a 2d AD "Deputy Commander for Laos Affairs" and an Air Operations Control Function.⁵⁴

These programs were temporarily set aside as a result of the loss of the first U.S. reconnaissance aircraft over Laos on 6 June 1964. The significance of this incident, hereinafter referred to as the "Klusmann" incident, established the harsh reality of U.S. aircraft losses in SVN and Laos; promoted the introduction of overt U.S. air operations; and highlighted the inability of the existing forces in SEA to prosecute adequately the SAR mission. Therefore, programmed actions to introduce the U.S. SAR forces were accelerated, with HU-16 and HH-43 aircraft being directed TDY into

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SVN and Thailand. Det 2 of the 35th Tactical Group was activated on 11 June 1964. An ASOC was to be established under the auspices of Det 2 and commanded by the 2d AD Deputy for Laos Affairs who would exercise command control over the U.S. air effort in Laos. In carrying out that mission, the ASOC would coordinate with, and provide various services to, the Royal Laotian Air Force (RLAF) and the U.S. Embassy AOC at Vientiane.⁵⁵

This control capability was in the process of being established concurrently with a meeting that was convened at Udorn to address the requirements for better SAR coordination and control in the Thai/Lao area. The meeting was attended by virtually all organizations influencing, directing or controlling friendly air operations in SEA, including 2d AD, Air America, U.S. Laotian Air Attache, and others.⁵⁶ PARC/ARS was represented by the Det 3 Commander who operated the 2d AD JSARC at Tan Son Nhut AB. At this meeting, the basic SAR structure and network were established and force requirements were developed. On 17 June 1964, two HH-43B helicopters deployed from the 33d ARS Squadron at Naha AB, Okinawa. This move was made with great urgency in the aftermath of the "Klusmann" incident. On 18 June, another meeting was held at Udorn to discuss definitive plans for the SAR force beddown and to establish mission concepts. This planning included the use of HU-16's already in theater, newly deployed

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HU-16's from the 33d ARSq, Marine helicopters, Air America aircraft and Rescue HH-43B's at Nakhon Phanom (NKP). Thailand-based USAF assets were authorized to prosecute SAR missions and, on 22 June 1964, Det 3 advised PACAF that procedures for alerting and controlling SAR forces in Laos had been coordinated with Air America.⁵⁷

The actions to introduce SAR forces had been spearheaded and justified by Detachment 3 of PARC/ARS and served to illustrate the classic dual role of a SAR control agency. As was previously shown on pages 13, 18, and 28, the ARS SAR control force had two responsibilities: one to operate the control center for the Commander who exercised operational control; and the other, to advise this Commander and the ARS command structure of the SAR requirements/capabilities for the designated area of operation. This staff advisory workload was carried by the Det 3 Commander and his "staff" of two officers and three enlisted controllers. ARS personnel in SEA fully recognized the urgency of the situation and realized that it demanded a long and arduous workday, seven days a week. They unavoidably became disenchanted with the apparent level of support they were receiving. It was a widely held opinion that the higher echelons did not comprehend the urgency of the situation. An early Det 3 Commander expressed his opinion:⁵⁸

The point I am attempting to make is that Rescue (and the rest of the Air Force) was pathetically ill-equipped to perform the Rescue mission in SEA. Our

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commanders who made an occasional visit to SEA during the 1962-1964 time period could not see, during their brief visits, the overall need for Rescue. CINCPAC, during his visits would say "It'll be all over next year" and would not authorize much-needed equipment. We all tried to advise him of the VC's continuing strength and that it would not be over that soon. CINCPACAF concurred with CINCPAC and, as a result, practically nothing was provided until early 1964. Apparently, Hq ARS thought their bread was buttered on the NASA side. It wasn't until a former 2d Air Division Deputy Commander, who knew the SEA situation, was assigned as Commander, ARS that a Rescue force was sent to SEA. . . .

A later Det 3 controller, assigned in 1963-64, who was experienced
in the Rescue control system, had a similar opinion: ⁵⁹

Then we were not fighting much of a war but people were getting killed nevertheless. We tried to get ARS to arm the 43's, put self-sealing tanks, armor, etc., on them to improve their capabilities. This was an up hill fight. Especially the guns on a Rescue helicopter - we rather thought that ARS felt that the VC and others were playing the game under the Geneva Convention. As far as we were concerned, that large red cross on the 43's was a good aiming point.

Another officer, who flew the first HU-16 to SEA and served as a crew commander, provisional detachment commander, and also worked
under the 2d ADVON JSARC, had this to say: ⁶⁰

. . . . Sometimes, my crews were averaging 8-10 flying hours per day accumulating over 100 hours in a two week period, all over hostile territory, without RESCAP. These were some of the problems encountered in the early days . . .

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(This page is Unclassified)

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The ARS controller personnel were hard pressed to perform their controller duties because, from the initial TDY deployment, manpower was austere; equipment was nonexistent; and support was parsimonious. A command level officer, who was assigned to PARC at the time, recalled of May and June 1964:

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. . . . On two or three different occasions, to my knowledge, the Commander, PARC, had attempted to visit Southeast Asia, but because of the "McNamera Ceiling," TDY was not approved for a visit to Tan Son Nhut. On one occasion the Commander, Det 3, was requested to meet the Commander, PARC, at Clark AB for a Commanders' Conference and discuss problems and recommendations to improve SAR in Southeast Asia. Shortly after this Commanders' Conference there appeared to be considerable animosity on the part of the Det 3 Commander with the ARS Commander and the PARC Commander, mainly because rescue airplanes and personnel were not assigned to Southeast Asia to support this limited rescue mission activity in the recovery of human remains and aircraft parts/portions. This animosity continued to develop until the month of June 1964, when the first aircraft (Navy) was shot down in Laos and the pilot ejected successfully in enemy territory. Recovery attempts were started and Air America became the principal recovery force in Laos, with the Commander, Det 3, assisting wherever possible. The Det 3 Commander personally cleared several messages to either the Commander, MAC, or the Commander, ARS, with information copies to the Commander, PARC, "blasting" higher authority for failure to support him in the rescue mission in Southeast Asia then and in the past. This may be further documented by reviewing the report rendered by two selected staff officers of Headquarters ARS during the later part of 1964.

In retrospect then, the opinions of those ARS officers stationed

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in SEA during this early period were extremely valid. These opinions were, at least in part, substantiated by a Hq ARS report of investigation entitled "Report of Conditions Existing in SEA." Although this report primarily dealt with the initial deployment of ARS forces to SEA and did not relate directly to SAR control center operation, it did, both verbally and pictorially, rather vividly describe the impossible depth of tasks that confronted the small force that made up Det 3 which included the SAR controllers. Even though the report was thoroughly addressed on pages 55-72 of the ARRS Corona Harvest, Vol I, USAF SAR In SEA, dated 31 January 1969, it did impact sufficiently on earlier ARS operation to warrant reiteration in brief. It must be viewed within the context of events leading up to and surrounding the "Klusmann" incident in early June 1964. Further, the conditions, support, facilities and communications gulf between the SAR personnel in SEA and the various higher headquarters that had SEA SAR responsibility (2d AD, 13th AF, PACAF, PARC and Hq ARS) generated long before the incident that brought about the "Report of Conditions Existing in SEA." This gulf was simply viewed from Vietnam as: 12-14 hours a day, seven days a week; versus 9-5 with a "tee time" on Saturday morning. The following repetitious comments extracted from this report were considered highly germane and served to punctuate the "lessons learned" and "conceptual and doctrinal recommendations" which will be covered in paragraphs 4 and 5 of this section: ⁶²

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. . . . The paramount problem in deploying the ARS forces was the lack of planning actions between 2d Air Division, PACAF and PARC. The 2d Air Division staff understood that the LBR unit could deploy to a "bare strip" and be self-sufficient. PARC and PACAF thought that 2d Air Division knew the manning and capability of ARS and expected 2d Air Division to furnish logistical support. Therefore, the necessary planning was, in fact, never accomplished prior to the actual move and for some two weeks thereafter.

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The PARC Comment to this was as follows:

PACAF OPORD 116-64 tasked 2d Air Division to provide host base support. Additionally, the logistics section of PACAF OPORD 116-64 tasked Thirteenth Air Force to provide necessary housekeeping and station sets at the operating location. PARC feels that the PACAF OPORD was proper in every respect and that all contingencies had been anticipated. . . .

Although PARC felt that all contingencies had been anticipated, and perhaps they had, the report does not support this stand. It cannot be denied that there was a lot lacking in the coordination up and down the line as evidenced by:

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. . . . The fact that Thirteenth Air Force and 2d Air Division failed to properly accept responsibility as directed by PACAF was not known to the PACAF staff until a series of messages were received from the ARS Det 3 Commander.

The move was made in accordance with PACAF OPORD 116-64. This order was written by PACAF and PARC personnel and dispatched on 14 June. Prior to this order, Det 3 had advised PARC that field conditions would prevail but did not spell out what support would be furnished

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by 2d Air Division and what men and equipment PARC should deploy. The Det 3 Commander assumed that PARC would know that "field conditions" meant bring everything. On the other hand, the Vice Commander, 2d Air Division, DCS/O and DCS/M assumed that Rescue or PACAF would deploy a complete package including housing, field mess, cooks, security police, etc. Although it cannot be proven, their assumption apparently was based on statements by the ARS Det 3 Commander. Here it is important to note that the Det 3 Commander assumed the functions of a complete staff for the move. According to the Det 3 Commander, he arranged with various sources to have rations, beds and bedding, fuel, power generators for lights, etc. flown in to arrive concurrently with the HH-43Bs. All these arrangements were apparently handled by him alone. He was eager, aggressive and, in the opinion of the 2d Air Division staff, seemed to be getting the job done. Consequently, the staff did not exercise their normal functions. The same staff now recognizes the fallacy and agrees to take proper action now and in the future.

The communications gulf was certainly supported by this statement: ⁶⁵

. . . we have convinced the 2d Air Division staff that frequent communications with PARC are essential to plan and employ ARS forces properly. I feel sure that we will get better cooperation. There is a sense of urgency here as there was in Korea. People tend to think all that is necessary is to call or twx a requirement and it will be filled. Too often the staff planning function is overlooked

The investigation had as one of its conclusions, that: ⁶⁶

. . . The lack of knowledge possessed by the Det 3 Commander and 2d Air Division concerning ARS LBR capability, lack of attention to planning by PACAF, PARC and 2d Air Division seriously degraded the deployment.

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.....
We cannot expect the Det 3 Commander to function as a
one man staff. With the impending deployments, this is
more urgent than ever. Since the PARC materiel staff
is small, I recommend that ARMDC dispatch repre-
sentatives
.....

If we are to maintain a unit at Nakhon Phanom, it
should be PCS with fully trained personnel and proper
equipment. This is not an exercise but is a shooting war.
Further, our capability to deploy qualified combat
recovery forces is extremely limited. It is dangerous to
send unqualified men and inadequate equipment for this
role. We should either prepare or get out of the business.

Certainly, the last sentence of the above quote strongly emphasized
the feelings of the staff officer who prepared the report and certainly
substantiated the opinions voiced by many of the officers in SEA during this
time period. If a single event or document could be pinpointed, then, this
report would have to be singled out as the catalyst for the revolution in
thinking within ARS and the basic doctrinal and conceptual changes which
created the Aerospace Rescue and Recovery Service with a dedicated combat
role. From the possibly indiscreet but dedicated actions of an overworked
and exhausted officer, grew basic revisions in doctrine.

4. SUMMARIZE LESSONS LEARNED: The task, its complexities, constraints
and scope must be comprehended prior to the assumption of that task. The
2d ADVON Commander, in December 1961, could have fairly well assumed
that his TDY SAR controllers could and would provide him with all the

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capability he required. However, AFR 20-54 (AFR 23-19) assigned the ARS Commander the responsibility of providing USAF, its Specified Commands and Unified Commands, with USAF SAR programming guidance. The ARS agent for the Pacific Theater apparently failed to provide expert SAR planning and programming services to the 2d ADVON. Research failed to locate any reference to significant staff support or supporting programming on the part of PARC or ARS until the fall and winter of 1963. That support deficiency can be validly defended on many counts as has been documented and discussed. In retrospect, the letter and intent of the present AFR 23-19 would have provided the necessary authority:

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. . . . Provide a world-wide capability to search for, locate, and recover personnel and aerospace hardware in support of USAF and other DOD aerospace operations. . . . Maintain combat personnel recovery forces for the rescue of military personnel from hostile areas according to AFR 64-3. . . . Provide the air component of JRCC's operated by JCS designated area commanders; or alternately, to man, equip, and operate the JRCC for the area commander, when so directed. . . . Provide and operate the SAR component in the air operations center supporting contingency operations.

- a. A dedicated combat recovery force should be maintained as an active component of the USAF capability.

The dated and modern SAR programming doctrine was not available at the start of the SEA contingency, due to austerity programs which caused the combat mission of ARS to be

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deleted during noncombat conditions. The SAR control capability of the JSARC must keep pace with developments in combat tactics and be capable of effectively controlling airborne Rescue/Recovery forces. Each contingency and its particular response concept will require specific adjustment of proven SAR control techniques.

- b. Personnel qualified to operate SAR control functions were not necessarily qualified to establish SAR control agreements and procedures.

The original TDY JSARC controllers detached with the 2d ADVON were fully qualified as controllers. Efforts by those controllers to establish a control system, constrained by their experience, were lateral and without significant effect on the basic functional problems. The managerial tasks and experience level of planning and programming were not compatible with the daily task performance and experience of a JSARC controller.

- c. Personnel qualified to operate SAR control functions were not necessarily qualified to establish SAR control networks.

As in the preceding lesson learned, a controller who was fully capable of operating the system did not necessarily have the

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knowledge required to establish the network of communications and agreements required to establish an effective SAR control network.

- d. ARS did not possess the fundamental doctrine and coordinated operations concepts necessary for tactical combat SAR.

The manpower and other resources necessary to maintain a ready combat SAR force were denied the ARS by the erroneous concept of wartime SAR being an extension of peacetime SAR. Beyond the controllers not possessing the needed depth of experience to develop an effective SAR control system, there was no repository of the necessary knowledge needed to guide them.

- e. Unified Command tactical operations, which include joint operations with other Services, require unique SAR control systems and network construction in order to utilize effectively all available forces.

Basic doctrinal and conceptual differences between USAF and the other Services blocked effective SAR coordination between the Services, above the working level, during the 1962-64 time frame. The inability adequately to integrate the command and control functions of the participating Services commonly produced

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great inefficiency, duplicate operations, late or inadequate responses and general confusion; particularly, during the critical initial period of a SAR mission.

- f. The Allied forces, on whose behalf the U.S. forces were operating, possessed no SAR capability.

The VNAF and Vietnamese Civil Aviation authority operated a civil SAR center in accordance with their international responsibilities under the International Civil Aviation Organization (ICAO). That capability was not utilized nor was there any indication that it was capable of effective performance. There was evidence of a Federal Aviation Agency (FAA) advisory effort through USOM during this period. However, no effective integration or coordination with the Allied forces' military SAR system was established. Further, early U.S. counterinsurgency and covert operations were denied the availability of an effective, dedicated and trained SAR capability.

5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a through f, generally support, in the same alphabetical order, the lessons learned that have been listed above:

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a. That the present AFR 23-19 be periodically reviewed to strengthen the responsibility of ARS for USAF SAR doctrine development and that all contingency plans and programs be reviewed by ARS for inputs of specific SAR control needs.

b. At the initiation of any contingency, a concerted effort be expended adequately to acquaint all ARS command/staff personnel with the nature of the task. Each headquarters should dispatch a highly-qualified representative with sufficient rank, capability and staff understanding to deal with the designated SAR responsible/operational control commander.

c. Highly-qualified SAR control supervisors should establish the SAR control network in accordance with contemporary and appropriate practices. These supervisors should make the detailed requirements known to the SAR control manager and stipulate those requirements for which they will require command assistance.

d. An operating SAR control function should exercise frequently with joint contingency forces for the purpose of developing updated combat SAR techniques and procedures. This requirement should be met by integration of an ARS JSARC within the established and proposed Unified/Specified Commands or special air warfare structure. That JSARC should maintain updated doctrine and techniques for contingency operations, in addition to providing a ready

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source of trained combat SAR supervisors and controllers.

e. SAR control must be recognized as a valid ARS mission, distinct and in addition to the dedicated force. SAR control doctrine, procedures and capabilities should include the use of all available forces, as appropriate, from each participating Service. Thorough planning and coordination will allow an acceptable degree of integration without causing any Service to compromise doctrine or command concepts.

f. SAR and SAR control development should be provided through the MAAG and the Military Aid Program (MAP) to nations who face insurgency. Additionally, this training would provide early U.S. counterinsurgency forces with a dedicated and ready SAR capability and the additive benefit of protecting covert U.S. operations.

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TASK ANALYSIS

1962-1964

FOOTNOTES

1. Interview, Lt Col Dale McGuire, Hq ARRS (ARIIG) by Lt Col Frank Catlin, 21 Nov 1968, pp. 1-2.
2. Ibid., p. 16.
3. Ibid., p. 1.
4. Ltr, Lt Col Albert R. McNamee to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, 6 Nov 1968, pp. 1-2.
5. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated. p. 1.
6. Interview, Lt Col Dale McGuire, Hq ARRS (ARIIG), by Maj J. S. Granducci, 2 Jan 1969, p. 4.
7. Interview, Lt Col E. J. Trexler, Hq ARRS (AROOPP) by Maj J. S. Granducci, 7 Jan 1969, p. 3.
8. McGuire, 2 Jan 1969, op. cit., pp. 2-5.
9. McNamee, 6 Nov 1968, op. cit., pp. 1-2.
10. McGuire, 2 Jan 1969, op. cit., p. 6.
11. McGuire, 21 Nov 1968, op. cit., pp. 3-4.
12. Ibid., pp. 7-9.
13. Ibid., p. 7.
14. MATS S. O. G-27, 23 Mar 1962.
15. Trexler, undated, op. cit., p. 1.
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17. Ibid.

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18. Trexler, 7 Jan 1969, op. cit., pp. 3-4.
19. Air University Designated Study No. 7, Vol VII, Rescue, 15 June 1968, Section I, p. 14.
20. Project CHECO Southeast Asia Report, Evolution of the Rules of Engagement for Southeast Asia (1960-1965) Continuing Report, 30 Sept 1966, pp. 5-8, 11-12.
21. Project CHECO Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-1966) Continuing Report, 24 Oct 1966, pp. 1-2.
22. Joint Vietnamese/U. S. Search and Rescue Agreement, undated, p. 1.
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27. Ltr, Maj John R. Cox to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, 12 Nov 1968, p. 5.
28. CHECO, USAF Search and Rescue in Southeast Asia (1961-1966), op. cit., pp. 1-4.
29. Air University Study No. 7, op. cit., Section I, pp. 52-56.
30. Ibid., pp. 56-57.
31. McGuire, 21 Nov 1968, op. cit., p. 5.
32. Cox, 12 Nov 1968, op. cit., p. 5.
33. Ibid.
34. Ibid., pp. 2-3.

(TASK ANALYSIS Footnotes - continued)

35. Ibid., p. 3.
36. Ibid.
37. Ibid.
38. Ibid., p. 4.
39. Ibid., pp. 4-5.
40. Ibid., p. 5.
41. Ibid.
42. Ibid., pp. 5-6.
43. Trexler, undated, op. cit., pp 2-3.
44. Ltr, Hq MAC (MAOCX/Col Mask/3388) to Hq ARRS (ARXDC), Subj:
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47. Ibid.
48. ARRS Manual 55-1 (Rescue Operations), 1 July 1965, p. 7.
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57. Ibid., pp. 30-34.
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61. Mask, 27 Nov 1968, op. cit., p. 1.
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67. AFR 23-19, 14 March 1967, par 3a, 3d, 3f, 3g.

HARDWARE ANALYSIS

1962-1964

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WHAT WAS USED? As discussed earlier, the SAR control task entailed multiple command and administrative lines of authority and responsibility. Hardware and facility support for the small control function were essentially collateral and supplied by the host component command. Further, the hardware (communications) provided to the SAR coordination/control function was essentially that utilized by 2d ADVON. Facilities requirements were established by the ARS command component assigned to the host command. As the hardware "tools of the trade" for SAR control consisted almost entirely of communications equipment and the utilization of opportune SAR forces, some of the aspects of "hardware and support," when viewed in the SAR control context, became almost inseparable. For this reason, the AU questions, in some cases, will appear to have been more appropriately addressed under "Support" rather than "Hardware," or vice versa.

a. WHY WAS IT SELECTED?

As stated previously, the communications equipment utilized within the SAR center was initially that requisitioned to support the 2d ADVON AOC. Communications, of course, were totally inadequate to support the combined

AOC and JSARC mission so ARS requirements were submitted to include Very High Frequency (VHF), Ultra High Frequency (UHF) and High Frequency (HF), which were required to provide communications with on-scene commanders.¹ At the same time, Det 3 was making some "off-the-cuff" arrangements with the Army to improve their communications "lot in life." It can be stated unequivocally that the communications network and procedures developed from the existing facilities within the RVN were not selected for SAR control use.

Due to the constraints imposed by the use of secondary SAR forces and their management and equipment capabilities, it should be pointed out that, although the AOC may have been adequately configured for limited USAF operations, it was not adequate nor designed for controlling/coordinating secondary SAR forces in SEA. Any discussion of hardware, as related to the SAR control agency during this time frame, must include a look at these secondary SAR forces. U.S. Army aviation doctrine follows as a basic tenant, "centralized management and diversified execution." When related to the USAF management and operational control system, this meant that no U.S. Army organization above the field level had real time control or knowledge of U.S. Army activities. Further, to agree to the need for a centralized command control communications system would compromise the basic concepts under which Army aviation operated. In effect then, in order to utilize U.S. Army forces as secondary SAR vehicles on a real time

basis, a specialized communications system would have to be made available to the SAR control force. This communications system would have to be developed to integrate the USAF SAR control force with the U.S. Army aviation control system, contingent upon the vagaries of any given local situation. Since the communications network would have to be designed by the USAF, in support of a USAF mission, it follows that it would also be provided and supported by the Air Force.

b. WAS IT DESIGNED FOR THIS TYPE OF TASK?

As has been shown, the AOC facility, although small, was appropriately conceived and provided the elements necessary to support the tactical SAR control. However, the scope and specialized nature of tactical SAR control, particularly, when secondary SAR forces provided a major part of the effort, were not reflected in the facilities and support available. Further, it was apparently assumed that Det 3 would initiate and justify programming for SAR control/management requirements; however, the manpower and facilities, which were provided, significantly constrained the efforts to improve those facilities and support. During 1964, office space and KWM2-A Single Sideband (SSB) equipment were provided for the SAR control task. Initially, no equipment and/or facilities were provided for this task other than what was available to the Air Operations Center, plus opportune tactical air communications.

Continued efforts by USAF to establish an effective Joint Air Operations Center were furthered in the spring of 1964 when an Army Aviation Office was established in the AOC. This helped considerably, even though it was only manned eight hours a day. Before this, there was a desk for an Army liaison officer in the AOC but it was not occupied most of the time, and very little Army assistance was forthcoming.²

Managerial problems were somewhat alleviated, since U. S. Army aviation management was integrated, to a degree, with the USAF centralized control system. It should be pointed out that this did not eliminate the problem but merely transferred it to the field level.

c. WAS IT USED PROPERLY?

Secondary SAR forces frequently had a unique advantage over primary forces in that they were usually more numerous, widely dispersed and, when involved in air ground operations, they were frequently present at the scene of hostility. Rescues of opportunity by secondary SAR forces were a vital part of combat rescue and, in a permissive tactical environment, provided a significant share of the SAR accomplishment. It should be noted that these opportune SAR vehicles were not equipped with a hoist capability; so rope, although not an acceptable means of ascending or descending from a hovering helicopter, was the best that could be provided to the U. S. Army by the SAR controllers.³

The secondary SAR forces were not properly utilized within the context of SAR operational procedures. JSARC real time control/coordination of a mission in progress was not possible, due to the communications system limitations. On-scene mission command duties associated with immediate rescues of opportunity by secondary SAR forces were then, of necessity, performed by whatever individual pilot exerted the greatest influence. Assumption of control/coordination was not directed, prebriefed or formalized. When only U.S. Army forces were involved, the assumption of the control/coordination duties were directed by existing Army command conditions. For example, during an Army helicopter assault operation, with a Command and Control (C&C) helicopter available, the senior field commander or his representative would normally assume control. If the disaster site was removed from the Army ground operation, or when no C&C helicopter was available, the senior Army helicopter pilot automatically assumed control of the rescue effort. However, during such operations a USAF FAC was frequently present. If the disaster victim were VNAF or USAF the FAC normally assumed control/coordination of the mission. This also frequently occurred when the crash site was removed from the scene of an Army helicopter assault operation. The peculiar relationship of the Forward Air Controller in joint air operations, the communications at his disposal and normal joint air operations procedures lent themselves to this assumption of control. However, no specific guidance was provided; therefore, assumption

of on-scene SAR control was more a factor of leadership and capability.

These field operations continued sporadically through the middle of 1964. The introduction of primary SAR forces started to provide detailed mission accomplishment and knowledgeable information feedback which permitted professional control of the rescue effort. The SAR controllers acted as on-scene commanders or controlled recovery efforts from forward locations, when the fate of the downed aircrew could not be determined. Rescue efforts that were controlled by JSARC personnel operating from forward locations were not necessarily condoned by PARC headquarters, as evidenced by the following comments:⁴

On several occasions members of the JSARC, usually the OIC, would go out to act as on scene commander for a SAR mission. It is rather surprising how inept many people are at organizing something like this. Anyway, we received outstanding support from our TAC Comm Squadron in the AOC. They always provided radios, radio operator and the know how to keep our on-the-scene commander in touch and running the show.

.....

One afternoon, I believe early 64, we received a report that a B-26 had crashed, no chutes and status of crew unknown. Cause of crash as reported to us was wing came off aircraft, no reported ground fire. This we reported in our normal opening report, which caused waves in 2d AD as this was not the first wing separation reported and we found out in short order that this was a sensitive subject. The crash was in an area with high trees, no landing area near, and a known VC area. Through considerable coordination, we were working up a recovery team to be headed by the OIC. We needed

helicopter airlift, strike aircraft cover and enough ground troops to move into the area for temporary security. This was all organized and the next day off went the mission. In the meantime the 2d AD D.O. had requested that the OIC bring back part of the crashed aircraft's wing span. The whole operation went smoothly - little or no enemy resistance. Unfortunately the pilot - killed in the crash - was recovered and we did get the failed portion of the wing span. All this was faithfully reported to PARC, who became distressed at us being in the salvage business. From our point of view we had done our job - recovered the crew, even though deceased, and helped out the D.O. However this incident helped lay the foundation for later events.

It has been noted that USAF must provide for command/control/coordination communications for integration with the Army field forces. Since the U.S. Army does not consider real time centralized control to be in consonance with their doctrine, if USAF desires the close air support SAR mission, then they must establish communications with the Army aviation field forces. The highly refined Tactical Air Control System (TACS) had been developed for the application of USAF tactical air power with a flexible response to the needs of Army field commanders. The Tactical Air Control System possessed the doctrine, manpower and communications equipment required to translate the Army unit commander's need into ordnance accurately delivered to priority targets. Since the original SAR controllers in SEA were assigned to the Air Operations Center (the hub of the TACS), it apparently was envisioned that the TACS would perform the combat rescue/

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recovery control function. In fact, it was understood that the Division Air Support Centers (DASC), which were directly subordinate in the USAF chain to the AOC, would have assigned personnel with additional duties as "SAR controllers." It must be understood that SAR operations were most frequently additive and contrary to tactical air operations. The same controller personnel could not successfully coordinate simultaneous tactical operations and SAR operations when any significant operational frequency was involved.

From 1962 until mid-1964, there were no significant dedicated SAR control facilities; therefore, the proper utilization of the available facilities must be so gauged. Documentation covering this time period indicated that all facilities which could be made available were utilized.

d. DID IT PERFORM AS EXPECTED?

As a practical matter the U. S. Army provided the only real rescue capability from 1962 until mid-1964, since the U. S. Navy did not become significantly involved in the conflict until the introduction of YANKEE TEAM forces. The United States Marine Corps (USMC) helicopter support in the I Corps area and later the Lao panhandle presented essentially the same problems as U. S. Army support, with respect to communications and doctrinal conflicts.

That this SAR control system did perform was demonstrated fact.

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However, the degree of performance versus the required performance was exceedingly difficult to establish, since no effective means was available to receive and record all aircraft disasters at the JSARC. It can be assumed that Allied aircraft were lost during the entire 1962-1964 period; yet the only information available was reported by CHECO as a verbal statement from a Det 3 Commander that "240" aircraft were lost or downed between 1962 and mid-1964.⁵

The method of establishing these losses and their validity were unknown. The hardware and support facilities, mainly communications and command/control procedures, were such that the SAR control function could not develop reasonably accurate SAR incident/requirements figures. Therefore, the question of total SAR control performance could only be interpolated in reference to the performance on known missions. Further, the records keeping capability of the SAR control force was severely limited by the paucity of office space and manpower. Because such deficiencies were generally present in most early SEA efforts, the accuracy of any performance evaluation using these questionable data is necessarily suspect.

Performance of individual SAR missions was well documented by CHECO and others. These were individual case performances and were not formally related to the degree of need. The key to SAR control performance in SEA was much the same as in the CONUS. To get the job done, many times

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it was necessary to beg, borrow or steal.⁶ The pressures of everyday activity and the need to "make do" so permeated the atmosphere that parsimony became the accepted standard. The system was made to work despite, rather than because of, the hardware and support facilities provided. Performance of the SAR mission, facilities and hardware was a product of the efforts of personnel assigned to the JSARC and not inherently due to the support provided.

e. WHAT WERE THE DEFICIENCIES?

Basic hardware deficiencies were addressed in two categories: SAR control deficiencies and SAR task force deficiencies. Even though the two were interdependent, when other than USAF primary forces were controlled, the two must be addressed separately, since the SAR control mission must be capable of prosecuting a SAR mission without being limited by the composition of the SAR forces available.

The secondary SAR forces that were utilized; U.S. Marines, USAF, VNAF and U.S. Army were not available for SAR missions under formal agreements or directives. These forces were obtained on a mission-by-mission basis, which required planning and validation of each day's SAR activities. This constant shifting of forces increased the workload of the controllers and decreased the effectiveness of the search and recovery forces. Search techniques, procedures and judgments provided by these variable SAR forces

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had to be relied upon, since no others were available. However, the decision made by the controllers, AOC duty officer, staff and 2d AD Commander could only be as good as their information sources. From experience gained by ARS in the CONUS SAR mission, where SAR experience and performance varied widely, it can be assumed that the SEA SAR efforts, without real time primary SAR control, were severely degraded. One incident, which was reported, tragically illustrated this fact. During this early 1963 mission, heroic efforts to rescue some downed personnel ultimately caused two deaths and the loss of five aircraft. The loss of these personnel and aircraft were a direct result of having inadequate SAR configured equipment to perform the ACR mission.⁷

The day following these losses, in light of bitter experience, an aircraft was severely stripped of all excess weight and successfully recovered all survivors and remains. On this mission a SAR controller was present; however, he had only radio contact and was unqualified to pre-evaluate the capabilities of the secondary SAR forces. SAR experienced forces frequently were required to operate under such extreme conditions that policies and procedures were developed to provide for SAR operations outside of the normal performance envelope. Continuous and recurring efforts were made by each group of controllers to circulate through all operational aviation units in SEA and disseminate such SAR policy and information. Personnel rotations and the random choice of SAR forces conspired against these efforts to

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significantly increase the capability of the secondary SAR forces.

A second aspect of these repeated briefing trips around SEA was the need to maintain viable communications with the secondary SAR forces. Since the exact location and line of communications could not be provided, the SAR control force had to continually update their information. Units were moved and communications were revised at the direction of field commanders, and without usable notification of any higher headquarters. These actions were taken by the U. S. Army, Marines, VNAF and the tactical air control system as a normal course, without direction or agreements, and without the knowledge of the SAR control force.

Usable SAR communications nets were maintained by the unilateral and singular action of the SAR controllers themselves and, therefore, did perform as a broad range coordination net. However, the inherent limitations of the SEA telephone network precluded near time control/coordination of SAR forces. In the context of control/coordination of secondary SAR forces, other than tactical USAF/VNAF fighter aircraft, the communications system did not perform. Research indicated that, at the level of 1962-1963 operations, control/coordination was available for USAF/VNAF tactical forces.

USAF/VNAF strike aircraft operating under the control of the TACS

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were readily available for near time control. Dedicated tactical command lines were available for scramble, and continuous HF/UHF communications were available for airborne control/diversion through the TACS/Controlled Reporting Points (CRP). These acceptable communications were restricted by the inability of the fixed-wing aircraft to perform recoveries and, until approximately 1965, the inability of these fixed-wing tactical aircraft to readily communicate with Army rotary wing aircraft who might be available to perform a recovery.

Search aircraft were provided by VNAF and FARMGATE when available, particularly when VNAF or FARMGATE aircraft were the objects of the SAR effort. Relationships were good and a general spirit of cooperation existed; however, tactical commanders were inclined to support SAR efforts for their own aircraft more copiously than for other forces. As the U.S. commitments in SEA increased, so did the numbers of aircraft. The Military Aid Program introduced H-34's to the VNAF, and additional U.S. Army resources were provided in support of the MACV advisory functions. As these forces increased, the SAR controllers persuaded these units to cooperate with the SAR program and developed lines of communications to them. During the 1962-1964 period, primary SAR forces were made available in the Thailand and Laos areas for support of highly sensitive operations. Those forces, for reasons of national security, were totally dedicated and

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were not available for general support of U. S. or SVN SAR requirements.⁸
Introduction of U. S. military YANKEE TEAM forces and the ensuing
"Klusmann" incident caused a reevaluation of the covert/overt relationships.
Procedures were developed to provide covert forces for SAR and to provide
SAR control support to non-military U. S. covert forces.⁹

A degree of management and control support was supposed to have
been provided by the U. S. Army. However, that support was not totally
effective as evidenced by the following comments:¹⁰

We did have U. S. Army personnel identified as contact
personnel for SAR missions, however, these personnel
varied widely as to reliability and capability. Very
frequent changes in those Army personnel took place due
to rotations and changes in their command structure.
During this time, for all of 1963, MAAG-V which even-
tually became MACV, was not too involved with SAR or
its operation. Again we had contact names but little
direct contact or direction.

Secondly, the U. S. Army helicopters were not configured for
rescue/recovery operations. Controllers assigned throughout the 1962-1964
period reported assisting in some degree with improving the Army's capability.
The following views were expressed by the Det 3 Commander:¹¹

During the period from 1962 to late 1963 there were
no dedicated SAR forces in SEA. Our RCC, responsible
for SAR, had nothing to work with except a few USAF
fixed-wing aircraft. On occasion a few U. S. Army H-21's
and a few H-34's from the U. S. Marines were available.
The VNAF had nothing even though all of our missions at
that time involved the VNAF. During SAR missions, we

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had access only to a few helicopters not being used on tactical missions. Those that were available were not equipped to perform the rescue mission. Only a few had hoists (cable length - 50 feet) and these were not installed in the helicopters as common mission equipment. After continued requests to MAC-V, a 250 foot rope was finally put aboard each U.S. helicopter. I finally obtained 8 litters for helicopter use. These litters arrived in an unusable condition which required local purchase money to buy parts and my controllers modified these litters. . . .

The availability of secondary SAR forces posed problems in that there were relatively few USAF aircraft in SEA during this period:¹²

It should be remembered that during my tour there were no ARS aircraft stationed in SEA until May 1964. In fact until the summer of 1964 there were relatively few USAF aircraft flown by USAF personnel. In 1963 we did have quite a few "advisors" flying with the VNAF in several different types of mixed squadrons. The U.S. Army had not yet committed large ground forces, however, they did have large numbers of advisors with the ARVN (Army of Vietnam) and some specialized small units. U.S. Army Aviation was introducing the Huey (UH-1B) in numbers - replacing the especially tired HH-21's. The U.S. Marines at this time were almost exclusively in I Corps and had a full squadron of HH-34's at Da Nang.

Patchwork and variable combat field telephone systems, though not designed for real time aircraft command control nets, were sought out and utilized to the best possible degree by the SAR control function.

Since no real time communications were available, the SAR control system was highly ineffective during the initial phases of actual recovery

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missions. When extended recovery efforts were required, due to terrain, weather or enemy action, the SAR control network did provide coordination and planning. When USAF/VNAF Forward Air Controllers (in strike aircraft) were scrambled for fire suppression and search duties, they would assume the on-scene control function. This was normally at the direction of the SAR control center, through the AOC duty officer. However, the function of the JSARC controller was still limited to providing forces and advising the recovery force after the fact. When extended search operations became necessary, the JSARC dispatched a trained controller to coordinate the joint ground to air efforts.¹³

During the 1962-1964 time period, the ground environment was sufficiently permissive to allow reasonable hope for a ground force to recover downed pilots who had been captured, or to locate incapacitated aircrew members by ground search. Although some survivors were recovered, the majority of these efforts proved to be futile as the enemy hostility increased throughout 1963 and 1964. As a result of a B-26 loss in early 1964, serious concern was expressed by Headquarters PARC with respect to the deployment of SAR control personnel on ground search missions. Headquarters PARC did not have firsthand knowledge of the existing conditions, the operational environment and the support facilities and equipment available to perform the task. Further, Headquarters PARC assumed that since the mission commander

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recovered human remains and parts of the wrecked aircraft, those were the primary reasons for deploying to the crash site.

ARS policy stipulated that the need for "immediate aid" must be assumed.¹⁴ During the limited efforts of the early SEA period, aircraft quite frequently were not observed to crash and no valid assumptions could be made regarding the fate of the aircrew. There was then, a definite SAR requirement to establish the status of aircrew personnel involved. The utilization of ground search parties was a reasonable and timely method of determining the need for further search for downed aircrew members. The utilization of SAR controller personnel to head up ground search efforts, particularly if body recovery was the apparent objective, was certainly questionable. While the disposition of combat casualty remains was a U. S. Army mission, it did not appear reasonable, during the SAR process of determining the fate of the aircrews, to depart an isolated and hostile crash site without the human remains. This would only result in a duplicate effort by the U. S. Army recovery teams. When the fate of the aircrew was reasonably known, such as an observed unsurvivable crash, rescue efforts were not made; and the appropriate U. S. Army agency performed the casualty recovery mission.

A review of SAR operations in SEA validated the assumption that SAR forces must expect to operate at the extreme limits of their operational envelope.

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The relatively short range and slow helicopters could not be placed on airborne alert; they had to be prepositioned, fueled to capacity and, in the case of the early HH-43B's, resort to highly questionable range extension procedures. High performance aircraft could not loiter sufficiently to provide escort and top cover for the SAR force, nor could they provide adequate low speed, low altitude supporting fire and search for the survivors. Further, as an overriding consideration, successful tactical air operations required extensive planning, timing, multiple flights to perform top cover, flak suppression, associated target destruction, and aerial refueling. Any deletion of a significant part of that attack force or protective screen would seriously impair the basic mission outcome. By diverting a part of the strike force to the SAR task, the enemy would have achieved disproportionate benefit from the downing of only one aircraft.

Therefore, a dedicated SAR control capability, from the tactical area command headquarters down to an on-scene commander in direct contact with the SAR forces, was a vital necessity. While these activities were relatively straight-forward, in the summer of 1964, the U.S. response to the Gulf of Tonkin incident pressed the existing SAR structure to its full capabilities.

It must be noted that of the five HH-43 units in SEA by end October 1964, only two were PCS. These two units were the first part of

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four programmed during, and for, the level of conflict that existed in the RVN at the end of 1963.

The TDY units were deployed to SEA as a response to the "Klusmann" incident, thereby effectively accelerating the already programmed HH-43F introduction. The requirement for an NKP detachment to support the Thai/Lao operations split the available TDY/PCS force between RVN and Thailand/Laos. Although the HH-43F units arrived shortly after the Gulf of Tonkin incident, their programming had no connection with the buildup that resulted from this act of aggression. At the end of 1964, only two detachments were committed for RVN SAR out of the four that had been programmed on a high priority basis in late 1963, and validated in early 1964.

At the close of 1964, the SEA SAR capability had not diminished the identified RVN SAR deficit despite the rapid deployment of three TDY HH-43 detachments. Introduction of the additive HU-16 command control aircraft, which was provided at the insistence of the Air Attache to Laos, and the approval to utilize the covert Air America system provided the means of increased capabilities that made it possible to provide a degree of SAR coverage to the burgeoning out-country operations. Nevertheless, RVN SAR control was not significantly altered or improved until after the close of 1964.

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2. WHAT ELSE WAS AVAILABLE?

There was no indication of any in-being communications capability which was not utilized in the effort to control/coordinate the SAR effort. It must be assumed that adequate communications equipment existed within DOD; and it follows then, that the requirements were not known and/or validated at such a level to cause those communications to be made available.

In the reappraisal which followed the "Klusmann" incident, a real time SAR control capability was provided for the first time in the form of HU-16 command and control aircraft.¹⁵ However, these aircraft were designated for the out-country mission and did not appreciably change the RVN secondary SAR force communications problem.

WHY WAS IT NOT USED?

As reported by the acting Deputy Chief of Staff/Operations to the 2d AD Commander, the Air Attache to Laos "was emphatic" about the vital necessity for an airborne command and control aircraft to perform on-scene commander duties during all out-country missions.¹⁶ Apparently, this experienced USAF officer, operating within the authority of the U.S. Ambassador and the State Department, provided the singular impetus for assignment of the vital communications link between the SAR control force and the SAR task force. Coincidentally, these same activities produced primary SAR forces in the form of HH-43B's in support of out-country

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operations. The U.S. Ambassador to Laos authorized the use of HU-16 airborne control aircraft which were immediately made available to scramble SAR forces. Through the end of 1964, these forces continued to be largely Air America.¹⁷ The introduction of primary SAR aircraft, capable of real time control/coordination, and real time communications into SEA provided the first quantum advance in the SEA SAR control capability. Primary SAR forces introduced to the Thailand/Laos operations in June and July 1964 and almost concurrently into the RVN, initiated the SAR control improvements which would multiply during the 1965-1966 time frame.

3. ADDITIONAL CONSIDERATIONS:

The U.S. Army mission of "battlefield medical evacuation" frequently overlapped and was confused with combat SAR, particularly in the permissive insurgency environment that existed in Vietnam. The U.S. Army aviation detachment at Tan Son Nhut informally agreed to respond to the USAF SAR requirements in early 1962. Their primary mission was medical evacuation in support of MAAG-V; and they had, in fact, the only aircraft available at that time with the ability to perform rescues. After the VNAF obtained H-43 helicopters, they were supposed to assume responsibility for ARVN medical evacuation; however, the results certainly left much to be desired. For example:¹⁸

. . . . If the request was for med evac of ARVN personnel, we turned over the information to the VNAF

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senior duty officer in combat operations or the VNAF duty officer in airlift. And herein was a large bone of contention among many of the U.S. personnel. . . . It always seemed that when we requested helicopter med evac (VNAF had H-34's) into a hostile area or at night, they never had a chopper in commission or could not find a crew. This did not set too well with many of us but seemed to be the case throughout most of my tour. The H-34 troops seemed to get a bit more backbone in mid 64 but they never could be counted on. As a result, the vast majority of the ARVN med evacs were flown by the U.S. Army.

4. SUMMARIZE LESSONS LEARNED: Directly related to task assignment, the degree and composition of SAR control hardware suffered from a void of understanding. Communications equipment, when utilized by the SAR control function for the control of secondary SAR forces, must be considered hardware.

a. An effective joint service SAR/combat recovery agreement was needed for every Tactical Area of Operation and significant sub-area.

The exact mix and composition of forces committed by the Services participating in a joint service command cannot be accurately determined prior to a specific definition of the contingency and/or the contingency force. The specific capabilities of aircraft and the owning command/service would be decisive factors in specific hardware requirements to perform the JSARC mission.

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- b. SAR control communications must be tailored to the SAR forces available.

When secondary SAR forces do not inherently possess a centralized command/control communications network then such a network must be established to satisfy the needs of the contingency mission objectives. There would be little value in obtaining authority from the joint Tactical Air Operation (TAO) commander to utilize forces of the other joint command components, if there was not an available control system that would permit effective utilization of these forces. As has been shown, the basic doctrine of the Services differ so fundamentally that specific effort must be directed toward integration of the command/control systems.

- c. Effective joint service SAR/combat recovery agreements and regulations must provide real time working level guidance.

The gravity of these agreements and intricacies of the inter-Service relationships as regards roles and missions must be fully recognized. The complexity and serious nature of these problems were the greatest single justification

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of the need. Such a basic and vital issue should not be left to plague the working level troops and frustrate their efforts to produce lasting solutions to the problems. Avoidance of these issues, by all the component services within SEA, appeared consistently as the single most pervasive and persistent military problem.

5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

Conceptual and doctrinal recommendations, as in lessons learned, were directly related to task assignment. Nonexistence of invivos combat SAR concepts and doctrine prior to the Southeast Asia involvement disallowed the programming of adequate SAR control facilities, sufficient hardware and the justifications necessary to support them. During the first quarter of 1962, the 2d ADVON had no assigned SAR authority other than that inherent in any operational USAF commander, i. e., those forces over whom Commander, 2d ADVON, exercised operational control. From the activation of Det 3 on 1 April 1962 until December 1962 the only SEA SAR authority was vested in Det 3 through Headquarters PARC from CINCPAC. Thirteenth Air Force supplement to PACAF Regulation 55-20 assigned SAR responsibility to the 2d ADVON Commander in early 1963. Upon these basic SAR authorizations and assignments of responsibility rested the USAF SAR authority. Without these, any commander who undertook to control or enter into agreements to

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control SAR forces, other than his own integral command, effectively abrogated the authority of a senior commander.

The conceptual and doctrinal recommendations listed below, subparagraphs a through c, generally support, in the same alphabetical order, the lessons learned that have been listed above:

a. Each Tactical Area of Operation SAR control center should draft and cause to be promulgated a joint tactical SAR agreement to provide a framework for rapid response to the SAR/combat recovery needs of all friendly forces operating within that TAO. Effective priority communications, command control/coordination and/or limited operations control during the progress of a SAR mission should be specifically delineated. Procedures for, and designation of, forward rescue control/on-scene commanders and facilities should be outlined. These recommended agreements need to address working level solutions, since a great body of service level and DOD doctrine has established the SAR roles and missions positions of the Services and Unified Commands. The joint service SAR/combat recovery agreement should be a requisite to the tactical SAR operations and should be supported by regulations developed by the component services. When necessary, a sensitive annex can be constructed in order to provide support for covert forces.

b. Each contingency must be evaluated initially and revised on a

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continuous basis to identify those communications facilities and equipments necessary to the exercise of command/control/coordination of secondary SAR forces. Each Service functions under its own doctrine, and their communications systems answer the needs of their doctrine. Voice mode SSB communications nets have proved extremely effective in SEA, and each field unit operates on some existing command net. A theater/tactical area SAR control net with net entry as defined by joint agreements or invitation would provide near real time control of secondary SAR forces.

c. An effective joint service SAR combat recovery agreement and enabling regulations must provide working level guidance within each TAO. The USAF component regulation existed in SEA at this time. While it was published under the joint authority of the Air Component Commander, the working level relationship and communications were not delineated, nor were the air component procedures workably incumbent on the other components of the joint command. Joint command tactical area combat SAR/recovery agreements were necessary to identify the USAF communications needs and provide direct SAR recovery communications procedures which would satisfy the command/operational doctrine of all Services. These agreements would have to reflect Service doctrine and DOD directives but could provide for variations at the working level to fit the needs and variations found in all joint command contingency operations. In addition, the assignment of the

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secondary SAR force mission to specified units of the other Services should be clearly spelled out, as should the provisions for the dissemination of USAF combat SAR doctrine and procedures.

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HARDWARE ANALYSIS

1962-1964

FOOTNOTES

1. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, p. 2.
2. Ltr, Major John R. Cox to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, 12 November 1968, p. 3.
3. Ibid., p. 4.
4. Ibid., p. 9.
5. Project CHECO Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-1966) Continuing Report, 24 Oct 1966, p. 3.
6. Cox, 12 November 1968, op. cit., p. 1.
7. Trexler, undated, op. cit., p. 3.
8. Ltr, Capt Gordon L. Hall to Hq ARRS (ARXDC), Subj: Corona Harvest Study, 21 Nov 1968, p. 1.
9. Project CHECO Southeast Asia Report, USAF Operations From Thailand (1964-1965) Continuing Report, 10 Aug 1966, pp. 116-117.
10. Cox, 12 November 1968, op. cit., p. 2.
11. Trexler, undated, op. cit., p. 2.
12. Cox, 12 November 1968, op. cit., pp. 3-4.
13. Trexler, undated, op. cit., pp. 2-3.
14. ARS Manual 55-1 (Rescue Operations), 1 July 1965, p. 7.
15. CHECO, USAF Search and Rescue in Southeast Asia, (1961-1966), op. cit., p. 33.

WARE ANALYSIS Footnotes - continued

Ibid.

1. CHECO, USAF Operations From Thailand (1964-1965), op. cit.,
pp. 121-123.

18. Cox, 12 November 1968, op. cit., p. 4.

(HARDWARE ANALYSIS Footnotes - continued)

16. Ibid.
17. CHECO, USAF Operations From Thailand (1964-1965), op. cit., pp. 121-123.
18. Cox, 12 November 1968, op. cit., p. 4.

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PERSONNEL ANALYSIS

1962-1964

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WERE THERE ENOUGH PEOPLE?

During the period January 1962 to October 1964 the SAR control function was authorized six personnel. During October 1964 the authorization increased to a total of 12 spaces. This small number of personnel will be addressed briefly since they represented the total PCS manning provided to support the entire SAR control mission during that period. TDY SAR controllers and aircrew members performed Rescue Control Center (RCC) or Rescue duty officer functions at Don Muang Air Base, Thailand. Toward the end of 1964 similar TDY personnel supported the RCC functions at Da Nang and Udorn.

In order to keep the SEA operations covert, strict ceilings were placed on United States manpower allocated to SEA.¹

In January 1962, the Pacific Air Rescue Center provided SAR controllers for the Air Operations Center of 2d ADVON at Tan Son Nhut, RVN. Three officers and three NCO Rescue controllers were provided

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on a TDY basis.²

On 1 April 1962, a permanent ARS unit was established to furnish SAR controller support to the AOC. It was designated Det 3, PARC. The TDY PARC Rescue controllers supported the 2d ADVON until the end of June 1962 when they returned to their home stations. Commencing on 2 July 1962, a commander, two officer and two NCO Rescue controllers and one administrative specialist arrived to man Det 3 on a PCS basis.³

As the number of ARS operational units increased in South Vietnam and Thailand the authorized and assigned strength of Det 3 was increased to provide necessary command control and staff guidance. The JSARC had become only one function of Det 3's expanding mission. In October 1964, six additional personnel were assigned making a total of six officers and six airmen Rescue controllers.⁴

The increase from six to twelve reflected the seven day/ twenty-four hour work schedule of the SAR control function which had been programmed in early 1964 to support the HH-43 deployments. This increase did not recognize the SAR advisory role of the Detachment, which in itself was a monumental workload.

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The requirement to develop secondary SAR forces and to establish and maintain a viable communications net for the coordination/control of these forces necessitated extreme work schedules. The controllers felt obligated by events and mission gravity to give fully of their off-duty time to provide the liaison and coordination necessary to establish a more effective SAR control function and recovery capability. There was no identifiable effort made to provide manpower in support of either the SAR advisory duties or the additional effort required to locate and coordinate with these opportune SAR forces.

2. WERE THEY THE RIGHT PEOPLE?

Personnel identification in support of the SEA SAR control function did provide the right personnel. However, review of the duties and tasks performed by these SAR control personnel showed that the controllers were required to perform extensively above and beyond the SAR control job.

Recommendations resulting from a 1964 investigation of ARS conditions in SEA pointed out the severe impact of the authorized grade structure and the inadequate manpower situation. The report indicated that:⁵

We must make a greater effort to man Det 3 with our best qualified mission controllers. There is little or no time to train after arrival and equally important,

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2d Air Division expects ARS to provide Rescue experts for this important mission. Further, I strongly recommend that controllers attend the jungle survival school prior to assignment here. Our people, when assuming on-scene commander responsibilities, actually work and live in the jungle.

I also believe that a Lt Colonel is required for the Det 3 Commander's job. We need a responsible, loyal, Rescue trained staff officer for liaison with 2d Air Division. The controller function can be handled by the Operations Officer. But the image of ARS is reflected to a large degree by the man who deals with the 2d ADVON Commander and his staff.

.....
It is essential that a good staff officer with Center experience be assigned as Commander, Det 3. He is the ARS representative, and due to the build up of forces and SAR activity, he should be one who knows the business. . . .

The strong emphasis on experience and judgment was, of course, justified by the poorly planned, coordinated and executed deployment of the detachment to NKP. The Det 3 Commander, although highly experienced as a SAR controller, lacked the staff experience and depth to deal with the complex staff activities required to deploy and redeploy forces.

3. WERE THEY ADEQUATELY TRAINED? For the performance of the identified tasks the initial TDY controllers were expertly qualified since they were drawn from ARS control forces within the PACAF area. This held true only for the initial TDY personnel. The first PCS personnel assigned to Det 3 on 2 July 1962 were identified in accordance with USAF

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overseas selection criteria outlined in Air Force Manuals (AFM) 35-11 and 39-11. These personnel were qualified in their Air Force Specialties (AFS) but they had little or no knowledge of search and rescue tactics, techniques and procedures; however, the Commander was an experienced Air Rescue officer. On-the-Job Training (OJT) was conducted by the Commander to rectify the lack of experience and knowledge. Headquarters PARC/ARS were advised of the problem and were requested to furnish only Rescue trained personnel in the future.⁶

4. WAS THE REPLACEMENT/ROTATION PROGRAM ADEQUATE?

Under USAF criteria the replacement/rotation program was considered adequate; however, its adequacy could only be viewed in light of the fact that the majority of personnel rotated upon completion of the 12 month PCS tour. The rotation program, when applied to unit effectiveness, must be considered inadequate.

Personnel assignment or manpower validation criteria failed to recognize the need for continuity, particularly in areas where 12 month assignments were utilized. On an overall USAF basis and in the average USAF organization, the debilitating effects of this lack of overlap and continuity could be minimized by inflicting abnormal workloads on other members of the organization. In some cases the Det 3 personnel voluntarily delayed their departure to ensure that their replacements received adequate

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orientation and training. A controller, who was due for replacement on 4 July 1964 but did not rotate until 30 days later, had this to say about replacements:⁷

Fortunately by staying 13 months our replacements were well checked out when we left. Much different than when I arrived. Not a pat on the back and I learned the hard way -- now it's your turn approach. We were serious and dedicated, and when you are dealing with something as important as human life, we made sure our replacements were ready for the job. . . .

5. DISCUSS ANY PERSONNEL DEFICIENCIES:

The USAF assignment criteria and special identification of SAR controller qualification was inadequate. In July 1962 when the initial PCS controllers were assigned to Det 3 the only really experienced person assigned was the Commander. The remaining personnel were identified under Air Force selection criteria contained in AFM 35-11 and AFM 39-11. This criteria provided for equitable overseas selection within a given Air Force Specialty; however, a controller AFSC as it applied to MAC, TAC, ADC or SAC did not qualify the individual as a Rescue controller or vice versa. These controller personnel had to be given on-the-job training at their duty location. The alternative would have been to return them TDY to the CONUS or PARC and go nonoperational until TDY assistance could again be provided. Corrective action was taken by Headquarters ARS to ensure that all future Rescue controllers would complete a search and rescue

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course of training, if not already qualified in SAR tactics, techniques and procedures.

The personnel system did not provide a means of identifying special experience of individuals after they had been reassigned from one organization to another. An airmen Rescue controller, when reassigned to another major command, was identified solely as a "command and control specialist, technician, or superintendent," AFSC 27430/27470/27490. Each major command had a course of training for command and control (274XO) personnel, which was a mandatory requirement before becoming qualified to perform controller duty in that command. This training was mandatory due to the variance in tactics, techniques and procedures that existed in each command. Due to this requirement, approximately 30 days of training was involved each time an individual was assigned from one command to another. Special Experience Identifiers (SEI) could have precluded retraining or at least reduced it.

During the January 1962 to June 1962 TDY period, the training and qualifications of controller personnel could be easily controlled. When PCS requisitions were processed through the normal ARS/MATS/USAF channels, the personnel system could not identify Rescue experienced personnel. The world-wide ARS SAR control manning was severely austere and did not possess the flexibility to permit withdrawal of controllers from ARS resources. No requirement or provisions could be identified which were designed to provide

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training for the non-ARS controllers that had been initially assigned to SEA.

In conjunction with the requisition of personnel, required training was necessary to ensure that replacements were properly trained for their jobs prior to arrival at a new unit. These training requirements were submitted by the gaining unit on Air Force Form 403 and processed through command channels. At each level of command the submission, nonsubmission or accuracy of data was subjected to the human error element, resulting in some personnel arriving at their new unit without completion of prerequisite training. If sufficient numbers of qualified personnel were assigned to the unit when untrained replacements arrived, the commander had the option to return them to the CONUS for training or to train them while on-the-job. The ARS JSARC and rescue control centers in SEA had austere authorizations; therefore, rather than operate with a shortage, the commander was forced to train unqualified newcomers "on-the-job."

The normal personnel lead time for requisitioning officers was nine months and for airmen six months. Out of cycle requisitions resulted in arrival of personnel in SEA approximately four to five months after submission of the requisitions. The rapid buildup of ARS forces in SEA often resulted in establishment of units manned by TDY personnel from non-SEA ARS detachments until PCS personnel could arrive. Under limited wartime conditions new units were created quickly and required to be

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operational very soon after they were established. Peacetime PCS assignment selection policies precluded filling these newly established positions rapidly enough to meet the requirements of the limited war situation in SEA.⁸

6. WHAT WERE MAJOR FACTORS AFFECTING MORALE?

Two main factors affected morale during the early years of SEA, one positive and one negative. On the negative side, the obvious parsimonious support from higher authority and the military and civilian leaders' apparent lack of comprehension and appreciation of the actual SAR situation permeated the "off-the-record" discussions of personnel interviewed for this report. On the positive morale side, by far the more visible and pervasive factor, was the magnitude and depth of the mission and the responsibility. Many personnel reported as to the consistent dedication and devotion to duty by all those assigned to the SAR control task. SAR/combat recovery was singularly acceptable to all men as a good and holy cause which could be openly pursued with extreme fervor.

Generally, combat recovery forces enjoyed a uniformly high morale despite the concern for primary SAR support and difficulties encountered in utilizing secondary SAR forces. SAR controller personnel consistently and extensively displayed an extreme "can do" attitude.

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The extremely high morale of these controllers was maintained, despite the lack of support and guidance from higher headquarters and the fact that they were faced with constant frustrations due to the lack of adequate ARS support. This "make do" attitude was commendable; however, it circumvented the most basic USAF doctrine of programming policy and probably resulted in insufficient justification and documentation of SAR control needs in SEA.

Specific morale problems associated with SEA TDY personnel were: the excessive amount of TDY from Det 2, PARC, and other non-SEA ARS units which was required to support the JSARC and the separation from family and friends on a short notice, unscheduled basis. These problems were of primary concern, since these same individuals were aware that they would probably have to complete an unaccompanied tour in SEA in the near future.⁹

Air Force policy, during 1964, was to provide SEA returnees an assignment to their base of choice, insofar as possible. Every level of command made a conscientious effort to fulfill this policy. Initially, no problems were encountered. The choice of assignment was considered a due right of those few who were assigned to SEA in the early years. This single policy provided both recognition for a difficult service and a tangible result of that recognition.¹⁰

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7. WHAT WERE THE SIGNIFICANT PERSONNEL ACCOMPLISHMENTS?

One significant personnel accomplishment during this period was the ability to accelerate manning sufficiently to meet the unprogrammed nature of most SEA manpower increases. SEA manpower additives were normally determined, approved and published without benefit of prior programming guidance. The rapid reaction necessary to meet these increases could only be provided by extraordinary personnel actions, which frequently caused some individual hardships. Despite the deficiencies, limitations and inflexibility of the personnel manning system, ARS managed to keep their SEA units operational by TDY and out-of-cycle requisitioning.

8. ADDITIONAL CONSIDERATIONS: None.

9. SUMMARIZE LESSONS LEARNED:

a. The USAF skill identification system did not provide an adequate identification of the particular skills or training needed for SAR control duty.

Peacetime operations permitted the manhours lost to the OJT of SAR control personnel to be amortized over a longer period. In addition, orderly personnel programming allowed retention of previously qualified personnel or selection of personnel with previous SAR experience. The luxury of prolonged OJT could not be tolerated in the combat environment, due to the short

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12 month tour. Personnel actions and rapidly developed training sources were utilized during the 1963-1964 time frame to alleviate this problem.

b. USAF manpower/manning management doctrine did not provide for time lost in training personnel in the duties and procedures peculiar to the gaining organization.

Since the initial JSARC force was deployed to SEA in July 1962, adherence to the one year tour policy would automatically dictate the rotation of the total force during July 1963. The short 12 month combat tour was frequently criticized, as it was often completed soon after the personnel were checked out and at the peak of efficiency in their duty assignment. Small command/control elements, such as the ARS SAR control detachments, did not have the depth to temporarily provide support to another SAR control unit that had lost all of its experienced manpower due to rotation. The requirement to "check out" each newly assigned man imposed an additional requirement for an experienced man to pull shifts with the trainee. The almost total rotation of the initial force, during the month of July, necessitated one group of controllers to

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voluntarily extend their tour one month in order to provide the needed guidance to their replacements. Since no official record could be found, it must be assumed that this extension was quite probably without command sanction. In response to the Corona Harvest project one SAR controller from the 1964 time frame reflected:¹¹

If your study does nothing else for the future to reflect upon, please emphasize that Vietnam or any other future conflict area is not a training situation, or at least you must have totally qualified people available to give assistance to those that are "on the job trying." Little mistakes are costly.

c. The JSARC grade and manpower authorizations did not provide for a fully qualified staff officer/controller position, which was necessary to ensure proper staff coordination with the commander providing required support and/or exercising operational control.

When the initial TDY forces were deployed to SEA in January 1962, they were given the responsibility of establishing a search and recovery control function.

This was to provide the much needed professional control of opportune SAR forces that were utilized to prosecute the SAR missions. The problems involved in establishing the JSARC were: identifying Army, Navy and other opportune

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SAR forces and establishing lines of communications required to effectively utilize these forces. This dictated the requirement for a professional staff officer.

d. SAR controllers were not qualified to provide the full spectrum of staff planning and programming required for the initial deployment of ARS operational SAR forces.

JSARC personnel assumed total responsibility for ensuring that adequate support was provided for the initial LBR units deploying to SEA. The staff planning and coordination necessary for the introduction of professional SAR forces demanded the full efforts of qualified staff personnel with broad SAR background and adequate rank to ensure prima facie respect from high ranking component/operational control commanders.

10. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a through d, generally support, in the same alphabetical order, the lessons learned that have been listed above:

a. The personnel system should have identified special skills required for each AFSC and for each command. Without this capability, out-of-cycle requisitioning and manual selection would be a continuing requirement and

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would result in some hardship to selected personnel.

b. A more selective personnel assignment policy should be established for small units to provide programmed assignment overlaps of up to 30 days. This, subsequently, existed to some degree due to the policy that provided for the retention of personnel until the end of the month in which they were scheduled to rotate. If the newly assigned man arrived in the early part of the month in which his predecessor was due to rotate, some 15-20 days overlap could be provided for OJT. However, this unscheduled arrangement could not be relied upon to provide qualified personnel on an uninterrupted basis, nor would it permit establishing a firm rotation date for departing personnel.

c. ARS SAR control detachments should be authorized an Air Operations Staff Officer (1416) position and filled through the process of manual selection. This method of identification must be adhered to in order to ensure that the individual selected possesses a broad Rescue background including experience in the SAR control function.

d. The responsibility for staff coordination, required to ensure adequate support of ARS units deployed to theater contingencies, must be assumed by the ARS commander designated as Deputy Commander for ARS in that theater. To ensure adequate support of ARS units deploying to SEA during

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the 1962-1964 time frame, the PARC Commander should have determined the degree of support required from his staff. It should not have been assumed that adequate support was forthcoming because responsible agencies had been identified in the operations order. There should have been pre-deployment PARC staff visits to determine if required support would be available and, if not, what interim support could be provided. PARC staff visits should have been made subsequent to the deployments to ensure that necessary and timely action was being taken to provide the required support.

Personnel problems in SEA could certainly have been minimized had more attention been directed toward attempting to resolve the problem rather than learning to live with it. The same overall doctrinal/conceptual recommendations that hold true for the Task, Hardware and Support areas also hold true for the Personnel Analysis. Trained personnel resources must be "in-being" prior to a combat contingency in order to effectively meet any contingency. Adequately trained/qualified combat SAR control personnel were not available in 1962, nor were training programs in existence that could qualify them for this important mission. Again, the blame must be placed on the doorstep of the headquarters level that was responsible for deletion of the ARS combat mission. This one action, perhaps more than any other, was responsible for the void in combat SAR doctrine and the failure to provide a trained, combat ready SAR force.

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PERSONNEL ANALYSIS

1962-1964

FOOTNOTES

1. Air War College Research Report No. 3765, Subj: Analysis and Evaluation of Search and Rescue in Out/Country Operations, Apr 68, by: Franklin E. Schneider, p. 14.
2. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, p. 1.
3. Ibid.
4. Hq ARS/DCS Personnel Manning Paper, PARC Dets, dated 25 June 1964.
5. Ltr, Lt Col Hartley to Comdr ARS, Subj: Report of Conditions Existing in SEA, undated, pp. 5, 10.
6. Trexler, undated, op. cit., p. 1.
7. Ltr, Major John R. Cox to Hq ARRS (ARXDC/Lt Col Crozier). Subj: Corona Harvest Study, 12 November 1968, p. 10.
8. AFM 36-11, AFM 39-11.
9. Ltr, MAC (MACCS), Subj: Action Items Commander's Pacific Trip, 7-27 March 1967, dated 20 April 1967, p. 6.
10. Ibid., p. 3.
11. Cox, 12 November 1968, op. cit., p. 10.

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SUPPORT ANALYSIS

1962-1964

1. HOW DID SUPPORT ACTIVITIES OR FUNCTIONS SIGNIFICANTLY
INHIBIT OR ENHANCE THE ACHIEVEMENT OF THE TASKS?

a. FACILITIES:

During the 1962-64 time period, facilities were inadequate; however, they were as ample as the facilities available to the AOC would permit. In late 1964, the situation had not improved appreciably even though an enlarged AOC building had been provided.¹

Any discussion on facilities support with respect to the JSARC cannot be terminated on the basis of discussing facilities only as they pertained to the operation of the SAR center. Unfortunately, the Det 3 Commander was saddled with more responsibility than that of establishing an ARS SAR control center. He, by virtue of his position as Det 3 Commander and ARS senior officer in the theater, was automatically established as the ARS representative for all SAR matters in SEA. The above statement cannot be factually made with respect to the 1962-63 or early 1964 time frame, as during this period no, repeat no, primary SAR forces were available in support of the SAR effort. True, some TDY SAR assistance had been provided covert operations during 1962. However, when considering

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facilities support, it should only be viewed in light of facilities required for the JSARC operation and those additional responsibilities that the Det 3 Commander assumed in attempting to provide facilities for the initial LBR units.

Documentation rather conclusively proved that the 1963-64 Det 3 Commander assumed the total 2d ADVON staff responsibility for support of the initial deployment of professional SAR forces. It cannot be positively substantiated whether he accepted this responsibility due to a lack of direction from higher headquarters or as a self-imposed responsibility that "someone had to do something about SAR in SEA" and no one else seemed to be available. An analysis of documentation covering this time frame would tend to support the fact that the Det 3 Commander felt quite strongly that he should take whatever action was necessary to ensure support was available for these initial forces because of the lack of guidance from higher headquarters. Had he not been a victim of early contingency confusion, he might well have emerged as the "Billy Mitchell" of the SAR cause in the Vietnam war. Historical records did not indicate whether there was a SAR "Billy Mitchell" in the Korean Conflict, but they did tend to imply that the overall effectiveness of that SAR effort could be directly attributed to the dedicated and untiring efforts of the early pioneers, who were confronted with the same problems and frustrations as those experienced in SEA. Even

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though the initial deployment of primary SAR forces was thoroughly addressed in the ARRS Corona Harvest, Volume III, entitled "LBR in Southeast Asia," it must also, despite redundancy, be considered in the JSARC package. It is here that the "Monday morning quarterbacks" must decide whether the support "fiasco" should be attributed to the 1963-64 Det 3 Commander or diagnosed as poor planning, lack of coordination and failure to follow through to ensure reasonable support was provided.

It was stated by the then Deputy Commander of PARC that:²

On two or three different occasions, to my knowledge, the Commander, PARC, had attempted to visit Southeast Asia, but because of the "McNamera Ceiling," TDY was not approved for a visit to Tan Son Nhut.

This statement must be questioned. To believe that the PARC Commander, who had been appointed as the Deputy Commander of ARS for the Pacific region, could not obtain authorization for a visit to SEA would be somewhat difficult to accept. Further, PACAF, PARC, 13th AF and 2d ADVON had all recognized the need for a professional SAR control force in SEA in late 1961 since they provided that force in early 1962 as a part of the JUNGLE JIM/FARMGATE deployment. It must be said in defense that, during this early period, the PARC Commander was concerned with an extremely small ARS effort in SEA. However, this effort, despite its size, should have been viewed and anticipated as the forerunner of greater

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ARS things to come in Southeast Asia and as such should have received "top echelon" support. In view of this "look back" at how ARS got its start in SEA, it would be quite easy to arrive at the conclusion that the initial deployment of professional SAR forces to SEA fell "flat on its face" due to lack of higher headquarters support. However, "Monday morning quarter backs" must also balance the rationale scale with thoughts of other mission requirements that ARS was expected and directed to meet, not only by higher headquarters but by public opinion as well. It should not be forgotten that Vietnam has never been a very popular war; and as a result, historians will deal rather severely with the political and military fiascos of that conflict.

In summation of facilities support, it must in all fairness be stated that none of the Det 3 Commanders, who reigned during the 1962-64 time period, should be held accountable for the lack of facilities or, for that matter, any other support that was required but that did not materialize.

b. LOGISTICS: Support necessary for the JSARC function was basically: administrative logistics, working space, real time situation presentations and communications for the relay of command instructions/coordination -- command/control of SAR missions. With respect to administrative logistics, the JSARC encountered the same problems that every organization in SEA was confronted with during this time frame. Sufficient documentation was not available to pinpoint specific deficiencies

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and problems that generated as a result of inadequate administrative support provided by 2d ADVON/2d AD. Working space was addressed under facilities and requires no further elaboration for the 1962-64 period. Task performance required real time situation presentations which necessitated support from all functions collocated with the AOC. These functions (weather, intelligence, TWX communications, etc) were utilized extensively by the JSARC; and this collocation permitted efficient coordination, optimum situation information, as well as direct contact with all available elements of the allied air effort. This was particularly advantageous to the JSARC, as there were no assigned primary SAR forces during the major portion of this period. Communications will be addressed under paragraph e to follow.

c. WEATHER: Weather service was provided as an integral function of the 2d ADVON Air Operations Center. This arrangement was completely acceptable and was one example of a highly satisfactory functional relationship in the early SEA years.

d. INTELLIGENCE:

The intelligence system within ARS prior to deletion of the 8th Air Rescue Group in 1958 was a viable, effective entity fulfilling a combat need. (This group was an outgrowth of the long range, low-level aircrew recovery unit reassigned on a roles and missions basis to MATS (ARS) from SAC in 1954. Its total peacetime mission was training for this combat aircrew

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recovery role.) The structure included approximately three officers and four NCOs in the group headquarters, two officers and two NCOs in overseas ADVONs, an officer and NCO in the squadrons of the group and an assigned NCO with an additional duty officer in the remaining ARS squadrons. Additionally, an element in Washington, D. C. of approximately twenty officers, NCOs and civilians had the sole mission of generating, from numerous data sources, area intelligence folders for use of the 8th Group units. Intensive training was conducted within the 8th Group units, and during exercises all facets of the intelligence function were used. Intelligence training was conducted at a lesser level in the remaining ARS squadrons. All of this capability was lost as a result of the 1958 policy decision that ARS not man nor equip for a combat mission.³

As a result of this prevailing lack of in-house intelligence capability through the 1962-64 period in SEA, the intelligence support provided ARS units was not adequate because no agency was producing a form of intelligence usable by ARS units. This lack was typified in the observations of one of the JSARC controllers during 1964.⁴

. . . USAF intelligence was just across the hall. They were of no help as they only collected information, not evaluate it. The U. S. Army (in next office) could "find out" but usually took longer than we could afford to wait. The ARVN or VNAF were the most talkative but usually unreliable . . . during 1964 and very early 1965, the recoveries were made without absolute (or even tentative) knowledge of the security of the area. . . .

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This lack of timely, mission oriented intelligence significantly inhibited achievement of the rescue/recovery tasks by failing to provide that information needed to determine mission route and area conditions prevailing or to be anticipated.

e. COMMUNICATIONS:

Communications support, while parsimonious, also suffered from the nonexistence of USAF validated requirements and SAR knowledgeable staff programming within PACAF/2d ADVON. SAR control communications needs were stated in Air Rescue Service Manual (ARSM) 55-1, Air Rescue Service Operations Manual and other publications. Either that guidance was not provided or was not considered valid, since no specialized communications facilities were made available. Further, there was no evidence of programming for these facilities other than that action taken or initiated by the SAR controllers. Additional deficiencies existed in the area of communications with non-USAF components of the joint MACV command. Basic differences in the managerial concepts and doctrine between the services grossly effected SAR control/coordination needs in this joint service environment.

The U.S. Army provided communications with little apparent fanfare while the USAF programming and individual validation system was mired in austerity and paper work. One of the controllers assigned to the JSARC during the early 1962 period had this to say about Army vs. Air Force

communications support:⁵

. . . . we had to have work orders, had to get a priority. We wanted to request a direct line to the Army's helicopter company and they put us in on a priority system behind many other people waiting for telephones. We couldn't live with that. The Army came along and strung the line for us. . . .

Other communications facilities were severely limited and were common user facilities usually belonging to other forces or services. The Rescue controllers developed the first usable summary of the available communications which turned out to be rather extensive once they were identified and diagrammed. However, considerable effort was required on the part of the ARS controllers as evidenced by the following comments:⁶

This is the first thing that hit us, nobody knew how to contact other people and that is the reason we went on the tour all through the countryside to find out what people had in the way of communications and who they could talk to from the field and how we could get a hold of them. . . .

.

We visited numerous units to find out when they were going to be up on their radios or, if they had telephones, how to contact them: what lines they were working. We diagrammed the USOM (United States Overseas Mission) communications system which was quite useful because they had communications to a lot of places that were even better than what the ARVN possessed.

The communications systems in existence were combinations of Vietnamese civil/military systems, U. S. Army field telephone systems, ARVN field

telephone systems, VNAF telephone systems and HF radio links. Some of these were loosely tied together and usually did not have boosters or signal amplifiers. Research indicated that USAF had a dedicated phone line to Bien Hoa and an HF or UHF tropo scatter propagation link with Da Nang through Nha Trang. This was apparently a dedicated tactical air command and control net and was terminated with a preemptive system that severely limited its use by the lower priority SAR control forces. Experience has shown that area wide tactical air control nets cannot always be made available for SAR control/coordination functions, since these functions by nature frequently overlap and are conflicting.

The energies of the first SAR controllers were absorbed entirely by the need to "make do." After the arrival of the PCS SAR controllers and Det 3, the problems were defined and the first substantive actions were taken:⁷

. . . . The communications requirements for the SARC at Tan Son Nhut and the RCC at Da Nang were submitted to include VHF, UHF and HF equipment which was required to provide communications with on-scene commanders.

What action was taken in support of these requests was not documented. The results, however, were reported by controllers who worked in the control center during late 1963 and early 1964:⁸

Telephone communication was rather like the challenge of a crossword and jigsaw puzzle combined. For the first

six months of my tour, one of our most prized possessions was our telephone comm diagram. Not only did you need to know how to get to a particular town or area but also the unit and particular individual and phone number involved. During this time we were using mostly U. S. Army communication facilities which were basically field switchboards. After going through two switchboards you usually could not hear your party if you reached him. At times we would use the Vietnamese Civilian phone system (P. T. T.) and usually would enlist the help of a Vietnamese from the Combat Operations to help. For awhile we had a P. T. T. line but its operation was erratic at best.

Communications systems were being upgraded throughout SEA.

During 1963-64, the tropo scatter system was expanded and KWM-2AHF SSB equipment was becoming available in the field. Additionally, the U. S. was installing a general use telephone system at Tan Son Nhut AB and tying that system in with the U. S. Army's field systems. As indicated by the comments to follow, even after improvements to the system, the telephone left much to be desired:⁹

. . . . The introduction and vast improvement in the Tropo system improved phone contact between the major bases and units. Toward mid-1964, the phone complex at TSN began converting to dial and the call director system. The conversion without the assistance of AT&T was slow and not without several goof-ups. But in a country like Vietnam, the telephone was not the answer to our communication problems -- just too unreliable and limited in contact potential. Thus for important missions we turned to radio and single side band.

Introduction of KWM-2A HF SSB equipment during early 1964

provided the first dedicated SAR communications and was put to use in every possible way.¹⁰

The radio contact and real time control of rescue forces was really very limited due to many things. First during my tour until spring 1964 our need for real time control was limited by lack of professional crews and compatible equipment. Many times AF and Army equipment doesn't jibe. Thus for most major missions, outside the Tan Son Nhut area, we would send a SAR controller to the field to direct the mission on scene. This I believe was much more effective than trying to run things from the RCC. When we sent out an on-scene Commander, the AOC Comm Sq would provide us a radio and operator. This allowed for better on-scene control as well as the capability to communicate back to TSN.

Another system used during this time frame was the phone patch capability of the single sideband system. We had phone patch capability in and out bound almost anywhere in Southeast Asia. The SSB station did very good work and helped a great deal. Even though the phone patch system worked, by early summer 1964, it proved impractical.

. . . . New operators were assigned from time to time which resulted in constantly training them in our procedures. The SSB was great if you take into account the number of aircraft you could talk to, very few. . . .

These communications difficulties effectively negated real time SAR control by the JSARC. U. S. Army helicopters usually did not have HF SSB and with respect to the VNAF the language barrier posed a problem. HF SSB was available when the RCC was established at Udorn in the summer of 1964. This provided a capability for direct communications with the primary

SAR forces, which were now arriving in theater:¹¹

. . . . The introduction of the HU-16's allowed direct contact with them and then with the introduction of HH-43's we also established a SSB net with their ground stations. So now rescue aircraft could be scrambled or diverted directly from the RCC.

Due to the fluid nature of the situation in June and July 1964 many times the positioning and frag information was coded and passed over SSB. In fact for some time this system was the only way to get information to NKP. . . .

It should be noted that the ARS fixed-wing aircraft were equipped with SSB, but the HF SSB ground stations maintained at each HH-43 detachment utilized KWM2A equipment. This equipment and the radio operators were provided by the 2d AD. The HH-43B units were deployed to the combat zone without a long range command communications capability. As has been noted the communications center, attached to, and located within the AOC, handled all TWX traffic. Since this facility will probably be treated in depth by the Air Force Communications Service (AFCS) only the following observations by a former ARS controller will be reported:¹²

. . . . the message center and the JSARC were located in the Air Operations Center (AOC). Throughout my stay the personnel of the (?) Communications Squadron provided outstanding support and did everything within their capability to support our mission. . . . Toward the end of my tour, mid-1964, messages both incoming and outgoing were subject to delays due to the fantastic increase in volume, especially in classified messages. One significant problem that arose, due to the volume, was the number of garbled messages received. Some garbles we could transpose with a teletype key code but

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many times we were forced to request reruns or retransmission which further saturated the communications capabilities and resulted in backing up all messages with copies by mail. Some mail copies beat the teletype message, especially true with routine messages, and sometimes the follow-up message was the only one received.

- f. AIR REFUELING: Not applicable.
 - g. RESEARCH AND DEVELOPMENT: Not applicable.
 - h. OTHER: None.
2. ADDITIONAL CONSIDERATIONS: None.
3. SUMMARIZE LESSONS LEARNED:
- a. Directly related to task assignment, the degree of SAR control, hardware support and facilities support suffered from a void of understanding. The USAF did not possess the doctrine or the concepts necessary to provide control/coordination for non-USAF secondary combat SAR forces.
 - b. Intelligence support provided ARS units was neither sufficiently timely or rescue/recovery mission oriented to permit proper assessment of conditions prevailing or likely to prevail in mission areas and along mission routes.
4. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

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The conceptual and doctrinal recommendations listed below, subparagraphs a and b, generally support, in the same alphabetical order, the lessons learned that have been listed above:

a. Since virtually all effective SAR forces were other than USAF, major USAF/ARS/PARC effort should have been initially directed toward integration with the available SAR forces. Although this problem was minimized due to the efforts of the JSARC personnel, tri-service efforts should have been directed toward developing and utilizing communications equipment that could be easily mated with that used by the other Services.

b. Establish and operate within ARS and subordinate units an intelligence training, collection, processing and dissemination program tailored to satisfy specialized ARS intelligence requirements for planning, crew briefing, crew interrogation and reporting. This would require authorization for and assignment of professional intelligence officers and NCOs to the ARS headquarters in the combat zone, the JSARC and to specified squadrons and detachments.

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SUPPORT ANALYSIS

1962-1964

FOOTNOTES

1. Ltr, Major John R. Cox to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, 12 November 1968, p. 3.
2. Ltr, Hq MAC (MAOCX/Col Mask/3388) to Hq ARRS (ARXDC), Subj: Corona Harvest Study (U) (ARXDC Ltr, 3 Oct 68), 27 Nov 1968, p. 1.
3. Ltr, USAF to MATS, Subj: Reorganization of ARS, 26 Sep 1958, p. 1.
4. Ltr, Det 4 AARRC (Major Clifford L. Brandon) to Hq ARRS (ARXLR), Subj: Corona Harvest Study, 8 Nov 1968, pp. 1-2.
5. Interview, Lt Col Dale McGuire, Hq ARRS (ARIIG) by Lt Col Frank Catlin, 21 Nov 1968, p. 4.
6. Interview, Lt Col Dale McGuire, Hq ARRS (ARIIG), by Major J. S. Granducci, 2 Jan 1969, pp. 11-12.
7. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, p. 2.
8. Ltr, Major John R. Cox to ARXDC (Major Joseph Granducci), Subj: Corona Harvest Study (My Ltr, 12 Nov 68), undated, pp. 1-2.
9. Ibid., p. 2.
10. Ibid.
11. Ibid.
12. Ibid., p. 1.

PLANS, CONCEPTS, AND DOCTRINE ANALYSIS

1962-1964

1. WERE PLANS AVAILABLE? During this period, no formal ARS plans were identified which concerned specifically the JSARC as such. However, several documents, current and/or published during the period, did have significant impact on the JSARC from a concept and doctrine viewpoint. Impacting the JSARC from a plans aspect was one series of SEA contingency plans from which only one draft copy of a SAR Annex was available for reference.¹

2. WHO WROTE THEM? JCS and U. S. Air Force wrote the policy and doctrine papers. The one complete SAR Annex referred to above and a recommended SEA SAR organization and force distribution for each plan of the MACV and MACTHAI series were prepared by Hq ARS, Plans and Operations officers for use by 13th AF Plans staff in writing the SEA contingency plans. The Joint Vietnamese/U. S. Search and Rescue Agreement was written by VNAF/USAF SAR representatives.

3. WHEN WERE THEY WRITTEN?

JCS Pub 2 was published in November 1959 and had eight changes to the document through end 1964. The Air Force letter to MATS which directed the reorganization of Air Rescue Service was written 26 September 1958 and

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was included in the Plans, Concepts and Doctrine Analysis because of the major impact it had on ARS concepts and doctrine. AFR 55-7 was published in 1965 and superseded the previous directive that had been prepared in 1963. Although the 1963 directive was not available ARS personnel familiar with both the 1963 and 1965 versions indicated there were no major changes.²

The SEA contingency plans (title and number unknown) were being drafted in December 1963; however, these documents were not available so the publication date could not be determined. The Joint Vietnamese U.S. SAR Agreement was consummated during late 1962-early 1963.

4. WERE THEY ADEQUATE?

JCS Pub 2 was adequate in that in joint actions it prescribed that a JSARC would be established with representation from all Services involved. The September 1958 Air Force letter to MATS indicated that ARS would be organized, manned, equipped, trained and deployed to support peacetime air operations. No special units or specially designed aircraft would be provided for the sole purpose of wartime search and rescue. This in effect destroyed the combat JSARC capability which existed in ARS at that time and precluded establishment of such a unit prior to the piecemeal growth of the SEA JSARC.³ AFR 55-7 confirmed the philosophy of wartime SAR being an extension of peacetime SAR thus further preventing establishment of a combat JSARC unit

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during peacetime.

The SEA contingency plans did contain provisions for a JSARC and sub-control centers, as required for a variety of circumstances, differing mostly by the degree and nature of escalation extent. They were generally adequate as written. Apparently the Joint SAR Agreement with the Vietnamese was inadequate as coordination was never effected to the extent that a true joint SAR control effort, or even joint use of existing control networks and facilities, was attained.

5. WERE THEY USED? JCS Pub 2 was used but not in its entirety in that, even though a JSARC was formed, full joint service participation in the JSARC did not transpire. The Air Force letter which was directive upon MATS/ARS was used in that no peacetime combat JSARC unit was maintained. AFR 55-7 was also used in that a combat JSARC was formed from peacetime SAR forces. It was not known whether the SEA contingency plans, as such, were used however, the principles established in these plans were generally followed due to the fact that a JSARC was established with the recommended sub-control centers. As discussed in pages 32 to 34 of this volume, the Joint Vietnamese/U.S. SAR Agreement was not implemented to any measurable degree.

6. WERE THEY VALID (WHETHER USED OR NOT)?

JCS Pub 2 was valid and should have been implemented to provide

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representation from all concerned Services in the JSARC. The concepts and doctrine spelled out in the Air Force letter were not valid and created an unacceptable situation; a total lack of in-being combat SAR capability. Overcoming this situation was expensive in time and as a result, probably in lives of those not rescued. The doctrine expressed in AFR 55-7, that wartime SAR was purely an extension of peacetime SAR, was painfully proven to be invalid. Again, time and probably lives were lost as a result of this doctrine.

The SEA contingency plans were valid in principle, and there was no evidence to indicate that the Joint Vietnamese/U. S. SAR Agreement was not valid.

7. WERE THEY IN AGREEMENT WITH:

a. EVENTS? JCS Pub 2 and the SEA contingency plans were in agreement with events; however, the Air Force letter and AFR 55-7 were not, in that they prevented the early establishment of an effective functioning JSARC. The Joint Vietnamese/U. S. Search and Rescue Agreement did not coincide with events. It was not implemented so actual events proceeded in divergence to procedures specified in the agreement.

b. CONCEPTS AND DOCTRINE?

The JCS Pub 2 was in agreement as were the SEA contingency plans.

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The Air Force letter and AFR 55-7 were not in agreement with the ARS concept that some combat force, at least a nucleus from which to develop a larger force, should be maintained in peacetime. This concept was manifested in attempts by ARS, as early as 1961, to obtain such a nucleus combat force in-being.

The Joint Vietnamese/U. S. Search and Rescue Agreement was consistent with U. S. concepts and doctrine. It appeared that the agreement, consummated in apparent good faith, for some indeterminable reason, became unacceptable for implementation in the view of the Vietnamese SAR forces. Doctrinal conflict may have been the reason for this.

c. EACH OTHER? Although the documents being discussed do not relate to the specific problem in either a similar or comparable manner, there was no distinguishable disagreement among them.

d. INTER/INTRA SERVICE? JCS Pub 2 by its very nature comprised the doctrine of all Services so no doubt enjoyed inter/intra service agreement. The Air Force letter was apparently in agreement with inter-service doctrine, as it was consistent with the tri-service wartime SAR procedures AFR 55-7 AR525-90/NWP Supp 37(A). These two documents were not in agreement inter-service wise as related to the ARS position concerning a requirement for in-being combat SAR forces at all times. The SEA contingency plans

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apparently were in agreement in principle.

8. HOW DID ORGANIZATIONAL, COMMAND CONTROL ARRANGEMENTS
INHIBIT OR ENHANCE THE ACCOMPLISHMENT OF THE TASK? As

discussed in detail in this volume under Tasks, there was delay in completing the delegation of SAR responsibility to the 2d ADVON. Although this lack of authority certainly threw a legalistic cloud over the propriety of the Det 3 PARC JSARC conducting SAR operations for 2d ADVON (instead of for 13th AF which had retained SAR responsibility for this area), there is no evidence to indicate that this inhibited task accomplishment.

9. ADDITIONAL CONSIDERATIONS: None.

10. SUMMARIZE LESSONS LEARNED:

a. Concepts and doctrines, barring maintenance of deployable, combat qualified JSARC personnel during peacetime, precluded timely establishment of an effective JSARC when needed.

b. The tendency seemed to have prevailed during this early period to provide, as a control element, ill-equipped, partially trained people in inadequate numbers; some having doubt as to their position in the overall SAR structure.

11. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

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The conceptual and doctrinal recommendations listed below, subparagraphs a and b, generally support, in the same alphabetical order, the lessons learned that have been listed above:

- a. Concepts and doctrines must provide for manning, equipping and training, during peacetime, of adequate SAR control forces to permit timely establishment of fully capable JSARCs and sub-control centers to control combat SAR operations.
- b. Plans for deployment and employment of SAR forces must include a fully trained, effectively sized and properly equipped control element and must clearly define its relationship in the SAR structure.

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PLANS, CONCEPTS AND DOCTRINE ANALYSIS

1962-1964

FOOTNOTES

1. AFCC USMACTHAI OPLAN 32-64-PH-II-(L), Draft, Annex K, undated.
2. Ltr, HQ USAF to Comdr ARS, Subj: Reorganization of Air Rescue Service, 26 September 1958, p. 1.
3. Ibid.

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TASK ANALYSIS

1965 - 31 March 1968

1. LIST AND DESCRIBE EACH ASSIGNED TASK:

CINCPAC, as the agency responsible for military SAR throughout the Pacific, assigned far-western Pacific areas to CINCPACAF who further subdivided these areas and assigned them to his subordinate numbered Air Force commanders in Japan, Philippines and South Vietnam. Under this assignment, the entire Southeast Asia combat area, including the Gulf of Tonkin, fell within the 7th AF area of responsibility.¹

In fulfilling these assigned responsibilities, the 7th AF Commander maintained a JSARC under his Directorate of Aerospace Rescue (DAR), through which he directed SAR forces that were pre-positioned at strategic locations throughout his area of responsibility. However, because of the size of the area requiring SAR coverage and the limited number of primary SAR vehicles, it was essential that equipment and personnel from all Services be available if the task of rendering assistance to distressed personnel was to be satisfied. Although each Service Component Commander retained primary responsibility for his own personnel and equipment, the recovery of combat personnel from friendly and hostile areas necessitated centralized coordination and direction of all SAR facilities.²

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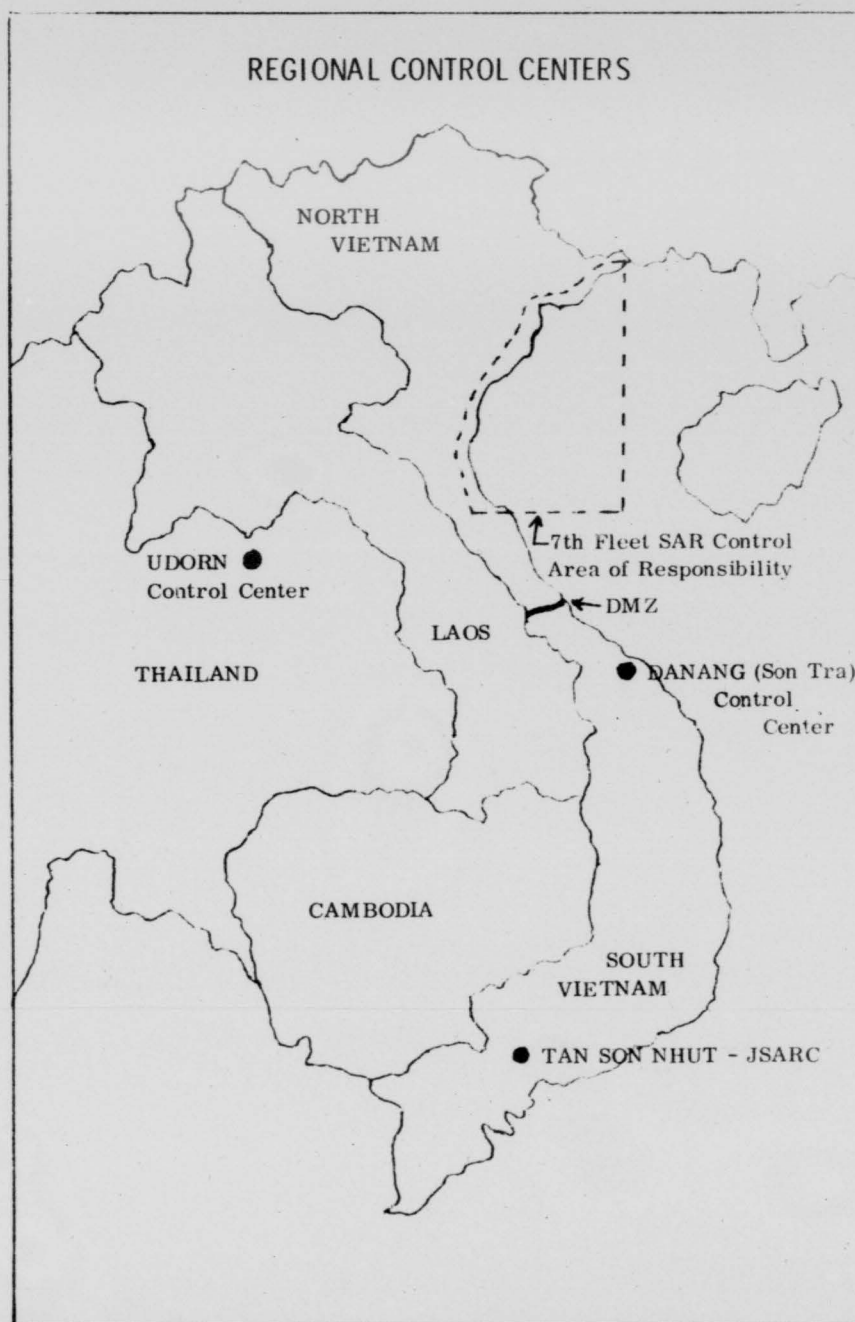
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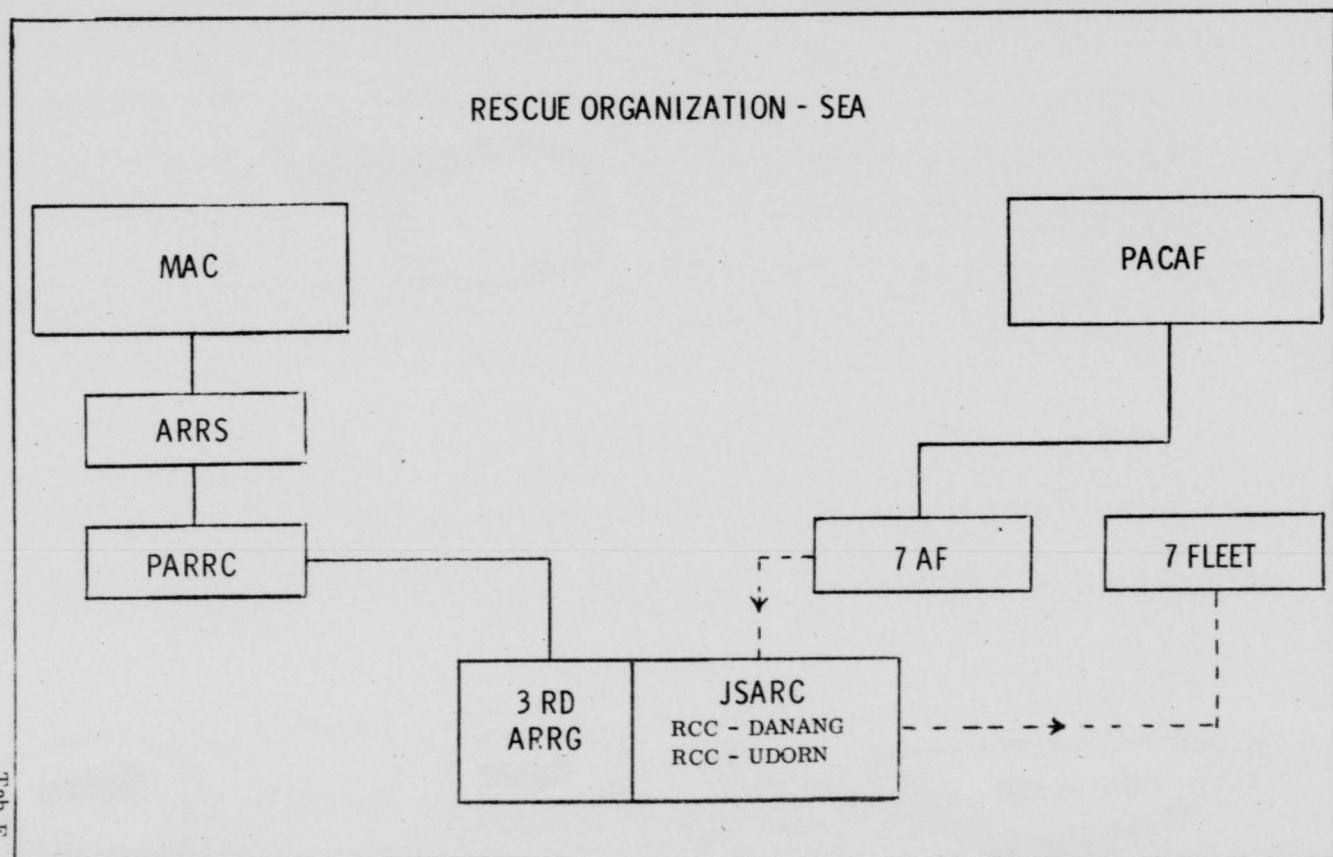
The primary task of the Joint SAR Center was that of providing coordinated direction of multi-Service forces when they were involved in SAR operations. Their secondary task was to develop a free and unrestricted flow of information that would establish close cooperation and action between U. S. forces represented in the Southeast Asia theater.³ This then, in essence, was no different from the task assignment for the 1962-64 time period; only the scope of the task had been subject to change.

Recognizing that the 7th Fleet forces, operating in the Gulf of Tonkin, had dedicated SAR forces assigned and available to respond to incidents involving their own carrier-borne forces, the 7th Fleet Task Force Commander was designated the SAR coordinator for the Gulf of Tonkin area north of the Demilitarized Zone (DMZ). This responsibility was exercised under the overall direction of the JSARC at Tan Son Nhut.⁴

Detachments of the 3d ARRGp, known as RCC's, were located at Son Tra AB, RVN and Udorn, Thailand and were organized to provide regional control of SAR missions.⁵ This SAR control network provided effective coverage of the total area of responsibility (Ref Tab E). The effectiveness of the SAR control network was further enhanced with the introduction of the HC-130 airborne mission control aircraft. The command and control structure of the SAR control system at end March 1968 is shown in Tab F.

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Tab F

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The primary function of this joint organization was the same as that of the JSARC -- to provide coordinated direction of all military SAR forces while engaged in SAR operations. It should be emphasized that the specialized Rescue forces assigned to the 3d ARRGp were not intended to provide all the SAR capability required to respond to all emergencies. Other military forces, regardless of their assignment, were subject to call to assist in a SAR operation if deemed necessary by the JSARC. For this reason, the JSARC was supposed to be jointly manned and responsive to the rescue requirements of all military forces.⁶

2. FOR EACH TASK:

a. HOW DOES TASK RELATE TO CURRENT CONCEPTS?

The task of controlling SAR efforts in SEA was more clearly identified and aligned with current concepts after the introduction of primary SAR forces. Prior to June 1964, the JSARC task was buried in the cloak of covert operations and the training and advisory role of U. S. forces in SEA. They functioned as liaison to the AOC more so than as a readily identifiable Joint Search and Rescue Center.

The rapid buildup of U. S. forces, starting in 1964 and gaining momentum thereafter, left no doubt as to the military intent of these forces. This then, permitted the JSARC to be identified and to function as an overt operation.

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With the introduction of professional SAR forces, the task of the JSARC took on new meaning. They were no longer in the body or equipment recovery business as practiced during the early time frame. The task of the JSARC, during the 1965-68 period, clearly related to current concepts. As concepts of operation were developed for the SAR recovery forces, new procedures and control techniques were developed within the SAR control system that permitted more effective control of the SAR task force.

b. WHAT WAS THE PURPOSE (NATIONAL/MILITARY OBJECTIVE) OF DOING TASK?

The national and military objectives in SEA became quite clear during the 1965-68 time period, as did the purpose of the JSARC task. As stated previously, the military objective was to provide for control of search and rescue efforts designed to conserve U.S. military resources. The number of aircrew personnel that were rescued in SEA and returned to duty certainly provided benefit to the national effort and supported the national objectives in that it denied direct information sources to the enemy. Certainly, aircrew members who had served a tour in SEA would attest to the side benefits derived from the increased morale which, in turn, improved mission effectiveness of the tactical forces.

c. WAS ASSIGNMENT OF THIS TASK TIMELY?

That portion of the task that charged the JSARC with the

responsibility to develop a free and unrestricted flow of information between U.S. forces represented in the Southeast Asia theater was assigned on a timely basis. That portion of the task that charged the JSARC with the responsibility to provide coordinated direction of all military SAR forces engaged in SAR operations cannot be considered as having been assigned on a timely basis. Certainly, the assignment of this last task was timely, only in the sense that it provided a nucleus of a SAR control force that could grow concurrently with the continually increasing requirement for the SAR control service.

A strict interpretation of timely assignment of the task would lead one to believe that it would include sufficient lead time to provide personnel and hardware capable of accomplishing the task with an acceptable degree of effectiveness. The sheer action of assigning this task to the JSARC, some 1-1/2 to 2 years prior to receipt of the equipment required to accomplish the task satisfactorily, cannot be construed as timely assignment. Certainly, the JSARC had a capability to prosecute certain SAR missions with the equipment on hand; however, documentation, available from various sources, supported the fact that numerous SAR missions were prosecuted without the benefit of JSARC, RCC, or 7th Fleet control. This, in almost every instance, could be tracked to the lack of adequate communications.

d. WHAT WERE THE CONSTRAINTS?

The lack of adequate communications was beyond a doubt the greatest constraint to the SAR control force. This, of course, was compounded by insufficient professional SAR forces in-theater which dictated the use of secondary forces for many SAR missions. The communications available to the JSARC, during the greatest portion of this period, did not provide a capability to contact rapidly the RCC's or the 7th Fleet SAR coordinator, where Gulf of Tonkin missions were concerned.

Until 1967 the JSARC did not have direct communications between the JSARC and RCC's, or direct communications between the JSARC/RCC's and all ARRS units in SEA. This presented serious coordination and control problems, particularly, between the RCC's and the JSARC. Prior to direct-line installations, it was not unusual to incur a 10-30 minute delay before establishing communications on an Immediate precedence phone call between the JSARC and units in the field.⁷

The major cause of needless commitments of ARRS forces could again be traced to communications. Army aircraft used FM frequencies almost exclusively and, due to the nature of their missions, operated at low altitude, usually out of GCI radar pickup capability. In addition, they were not normally required to be controlled by GCI or any other controlling agency. There were very few ARRS aircraft equipped with FM, which made

it extremely difficult to contact Army aircraft, let alone control them during a SAR mission. This problem was alleviated somewhat after the HC-130 airborne command control aircraft were modified with FM radio equipment.

Effective coordination and communication between the JSARC/RCC's and the Naval SAR coordinator posed equally serious constraints to effective SAR control. One SAR mission, in particular, bears out this observation. ARRS forces were committed to a SAR mission in NVN involving a Navy A4 pilot. Naval SAR coordinators were not aware of this commitment and launched a Navy SH3 helicopter which was hit by anti-aircraft fire and subsequently forced down due to loss of fuel. Although the crew survived and was recovered by ARRS forces, along with the original SAR objective, this was a needless duplication of effort, resulting in an unnecessary loss of an aircraft. Subsequently, more effective coordination was established between Air Force and Navy SAR coordinators. Here was clearly a lack of coordination that was caused by limited communications.⁸

The electrical power supply for the JSARC turned out to be a rather serious constraint to effective SAR control. On 5 April 1966, the JSARC moved into the newly remodeled control center. The 3d Group Commander indicated initially that there was poor power voltage, but that the move was made without any loss of SAR control. Two new generators were installed for the sole use of the 3d Group/JSARC, which should have provided

steady, dependable power.⁹

In April 1967, the 3d Group Commander stated that the electrical power supply for the facilities in the 3d Group Headquarters, particularly the JSARC, was a continuing problem. The portable generators that provided the power to the JSARC were not adequate in that they were constantly overloaded. In the first three months of 1967, there were 46 complete power failures. Power fluctuated to the point where it seriously affected the equipment on the average of 20 times a day. Attempts to alleviate this situation, through requests to be placed on the base power system, were unsuccessful.¹⁰

A serious communication problem existed during the prosecution of in-country SAR missions. Numerous times, ARRS helicopters were launched on a reported in-country emergency, only to find out later that other forces (usually, Army helicopters) were on-scene and had effected recovery. Most of these in-country emergencies were reported by a GCI site to the JSARC which normally would make the decision whether to launch ARRS aircraft. The JSARC would inquire of the GCI controller whether any forces were on-scene, or airborne nearby, which could be diverted to the scene. Numerous times, Army helicopters were in the SAR area taking rescue action, but without the knowledge of GCI, traffic controlling agencies or the JSARC. In these cases, the JSARC had no choice but to launch ARRS

forces. Many times, after ARRS forces were en route to a SAR scene, it was learned that they were not needed.¹¹

e. WHAT WERE THE EXPECTED RESULTS?

Prior to 1965, the task assigned to the SEA JSARC has not been clearly defined and, since the SEA SAR control organization did not follow established JSARC practices, it was impossible to determine what was really expected. As in the 1962-64 period, it must be assumed that the SAR control force was expected to perform the same functions as those performed by other SAR control elements within the PACOM. This concept had certain validity if the geographical area of operation was ignored and no thought was directed to the technical/industrial capabilities of the country in which SAR control had to be exercised. Certainly, adequate SAR control could be established in most any geographical location, under peacetime conditions, and reasonably be expected to function effectively in support of short-term contingencies. This, despite the fact that the technological capabilities of the host country might not be able to produce a Bell Telephone or Radio Corporation of America (RCA) communications environment. This, of course, would pertain only to a peacetime atmosphere which would be more tolerant of communications deficiencies. To project a SAR control element into a hostile environment that did not encourage improvements to the existing primitive land-line system posed one problem.

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Failure to provide an adequate ground-to-ground or air-to-ground communications network that was capable of overcoming these earthbound communications deficiencies posed still another problem.

Despite the limitations of the equipment, which was certainly not an unknown quantity as far as SAR control personnel were concerned, it was expected from the start that professional SAR control forces would improve the overall effectiveness of the SAR effort.

To minimize communications deficiencies, an Airborne Mission Commander (AMC) was assigned to act as an extension of the JSARC or appropriate RCC. In this capacity, he exercised overall control of SAR mission activity, evaluated mission requirements, coordinated force composition and activities, and monitored mission progress. The AMC, in discharging his responsibilities as a direct representative of the 7th AF SAR Controller (JSARC), exercised operational control of the committed forces through the On-scene Commander (OSC). It was anticipated that this airborne SAR control system would provide a decided increase in the overall effectiveness of mission control.

f. WHAT WERE THE ACTUAL RESULTS?

As has been pointed out, the effectiveness of the SAR control system was degraded by the assignment of inexperienced personnel and the

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lack/void of adequate communications equipment. In addition, secondary SAR forces had to be utilized which further complicated the SAR control problems. Despite the fact that the JSARC/RCC's were not equipped to perform effectively the assigned mission until in the 1965-68 time period, they did effectively use the equipment available within its limitations.

The 3d Group Commander, on 6 March 1968, summed up the JSARC operation as follows:¹²

The JSARC has now been operating in the 7AF Command Center for two months and is running smoothly. The direct coordination on-the-spot with 7AF has ironed out some of the difficulties we previously had with coordinating immediate MIGCAP support, tanker support, and border clearances. An up-to-the-minute visual display of the mission, in conjunction with the intelligence and weather displays which flank the SAR boards, permits rapid decisions which previously had to be piece-mealed using telephone inputs. I believe the greatest significance in integrating the SAR control system into the Command Center is the exposure of SAR to the hundreds of officers who visit the center. Inevitably, in future wars or exercises, some of these officers will be commanders or Senior Staff who will look for SAR in their own Command Centers since SAR is a responsibility of the Air Component Commander. The RCC at Monkey Mountain has moved into the new computerized command and control facility and we expect the Udorn RCC to follow suit this month. . . . By utilizing tape storage and computer displays, it will be possible to give real time azimuth, distance, and time information about the potential rescue directly to the SAR task force. Intelligence information, vectors around known hostile areas. Hostile aircraft warnings, and egress data should also be made immediately available to our forces. . . .

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Certainly, the "save" record compiled in SEA attests to the effectiveness of the SAR forces, despite the personnel, communication, and recovery vehicle deficiencies that have been cited.

g. WHAT WERE THE ALTERNATIVES RELATIVE TO THE ALLOCATION AND/OR EXECUTION OF THE TASK?

The most logical alternative would have been to maintain a SAR control force "in being" that was equipped and trained to effectively perform the combat SAR control mission. This, again, gets back to the point that has been made numerous times throughout the four volumes that comprise the ARRS Corona Harvest input for the 1954-31 March 1968 time period. Peacetime SAR forces, equipped with peacetime equipment and trained for the peacetime mission, cannot be propelled into the combat environment and be expected to function effectively overnight. Again, lead times required for development of new or modification of existing equipment rapidly devoured months and years of ineffective operation, prior to receipt of equipment capable of accomplishing the assigned task.

Another alternative would have been to provide ARRS with a high enough priority to obtain the necessary equipment on a more timely basis. The equipment that was needed to prosecute more effectively the assigned mission was in the Air Force inventory prior to 1965.

Still another alternative would have been to provide an airborne mission control platform on a more timely basis. The introduction of this SAR control system eliminated many of the problems that had plagued the JSARC/RCC's/7th Fleet SAR coordination, prior to the introduction of this capability.

3. ADDITIONAL CONSIDERATIONS: None.

4. SUMMARIZE LESSONS LEARNED:

a. Combat SAR control procedures had to be developed "after the fact."

Although ARRS had considerable experience in the operation of a SAR control center prior to the introduction of the JSARC/RCC's into SEA, this experience did not necessarily prepare or qualify them for the job at hand. This past knowledge of SAR control procedures certainly provided a firm basis for establishing the JSARC/RCC operation in SEA, but did not provide them with the procedures that would most effectively control combat SAR forces. These techniques had to be developed through experience gained in the combat environment and tailored to the tactics and techniques that, again through experience gained in combat, had proven to be

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most effective for the SAR task force.

b. The JSARC/RCC's were not provided with adequate equipment to accomplish effectively the assigned tasks concurrently with task assignment.

An effective SAR control communications network was not available until early 1968 when "hot lines" were installed between the JSARC/RCC's and all ARRS operational units. Control of secondary SAR forces remained a problem until 1967 when FM radio equipment was installed in the HC-130 airborne mission control aircraft.

c. The electrical power supply for the JSARC was inadequate, which resulted in an unreliable mission capability.

Priorities precluded the JSARC being placed in the base power system, which necessitated the use of portable generators. The generators supplied were inadequate in that they could not provide reliable power to support the JSARC operation.

d. The introduction of the airborne mission control capability was not timely.

This capability was sorely needed to supplement the SAR

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control communications network that was not capable of effectively accomplishing the assigned task.

5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a through d, generally support, in the same alphabetical order, the lessons learned as listed above:

a. Combat SAR control procedures should be developed, tested and trained against during peacetime.

JSARC personnel should participate in tactical exercises, war games, etc. right along with the ARRS operational forces and in conjunction with tactical forces. Basic combat SAR control concepts of operation should be developed that are readily adaptable to newly developed operational tactics and techniques that are tailored to the geographical environment in which the forces will operate.

b. Timely planning must be accomplished prior to task assignment, in order to provide sufficient lead time for procurement, production or modification of equipment required to effectively accomplish the assigned mission. SAR control forces were assigned to SEA in 1962, which should have been sufficient lead time to provide the equipment required to support

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the buildup of forces that began in 1964. If such was not the case, certainly in June of 1964 when the buildup started, SAR control equipment requirements could have been more clearly identified and timely action taken that should have provided it prior to the 1967 time period.

c. The JSARC should have been tied into the base power system or provided with generators capable of supporting, on an uninterrupted basis, the JSARC communications function.

The loss of power or fluctuation of power during the conduct of a SAR mission could have resulted in mission failure. Improved reaction time of the recovery force has been identified as one of the major deterrents to improved recovery rates. Unreliable communications, generated by power failures, cannot be considered even marginally acceptable for a unit controlling rescue efforts.

d. The requirement for the airborne mission control function should have been identified earlier and expedited action initiated to obtain this capability.

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TASK ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. Ltr, Comdr PARRC to Comdr ARRS, 10 January 1968 w/1 Atch, Atch 1, p. 1.
2. 7 AFR 64-2, 5 April 1967, p. 3.
3. Ibid., p. 3.
4. Ltr, Comdr PARRC, 10 January 1968, op. cit., Atch 1, p. 1.
5. 7 AFM 64-1, 1 March 1968, p. 1-1.
6. 7 AFR 64-2, 5 April 1967, op. cit., p. 3.
7. Ltr, Hq ARRS (AROCP/Maj Crouch) to Hq ARRS (ARXLR/Lt Col Crozier),
Subj: Corona Harvest, undated, pp. 6-7.
8. Ibid., p. 8.
9. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter,
9 May 1966, p. 2.
10. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter,
6 April 1967, p. 5.
11. Crouch, undated, op. cit., p. 7.
12. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Monthly Commander's
Letter, 6 March 1968, p. 4.

HARDWARE ANALYSIS

1965 - 31 March 1968

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WHAT WAS USED?

The equipment required to operate the JSARC must first be identified in terms of its classification as hardware. Communications equipment will be the only item considered as hardware. This equipment was the key to the JSARC function and established the only physical link between the JSARC and the SAR forces that had to be alerted, deployed and controlled.

The primary communications used were telephone and radio(VHF, UHF, FM, HF, and SSB). These facilities connected the JSARC with the rescue control centers at Son Tra AB, subsequently identified as Operating Location 1 (OL-1), and Udorn, identified as Operating Location 2 (OL-2) and/or with the aircraft that performed the missions. For clarification, the RCC at Da Nang was moved to Monkey Mountain which was later designated Son Tra AB. The requirement for a rapid communications capability among the above SAR elements was recognized from the very beginning, but receipt of the equipment required to effectively accomplish the assigned task was never available on a timely basis. In some instances, equipment was never received, while on the other hand equipment required to effectively prosecute the mission was not authorized.

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Communications between the JSARC and OL-1 and 2 was primarily by telephone until late 1965 when the installation of a SSB net was completed. This complex included two KWM-2A's at OL-1, two KWM-2A's at OL-2 and three KWM-2A's at the JSARC in Tan Son Nhut. The 3d ARRGp Commander considered this to afford excellent SSB communications coverage of the entire SEA theater. ¹ In November 1965, the 3d ARRGp requested 7th AF communications to install direct land lines from the JSARC at Tan Son Nhut to OL-1 and OL-2 as a backup for the SSB net. ²

In July 1966, the communications capability of the JSARC at Tan Son Nhut was further improved with the installation of a 20 channel Transportable Radio Air/Ground Communications (TRAC) 32 UHF radio. ³ To further improve the communications capability, work was begun in August 1967 to again update the equipment which included the installation of a 10kw HF radio, as well as VHF and UHF and tape recording equipment. ⁴

The hot lines that had been requested in November 1965 were not installed between the JSARC and OL-1 and OL-2 until July 1967. This greatly improved the coordination and control of SAR missions as did the installation of direct hot lines between the JSARC and all LBR/ACR detachments in Vietnam. These installations were not completed until early 1968. ⁵

Communications equipment in the control center at Da Nang

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was seriously lacking in terms of controlling mission aircraft. This was because all communications between OL-1 and SAR aircraft had to be conducted on HF. In September 1967, the 3d ARRGp loaned OL-1 a VHF transceiver to increase mission control capability. When OL-1 moved into the new Tactical Air Control Center (TACC) in March 1968, their communications capability was greatly improved. This was true, only because the TACC Commander made two UHF and two HF radio sets available to OL-1. Two FM sets were also borrowed from the U.S. Army to facilitate the coordination and control of SAR efforts when Army units were utilized. In summary, the entire communications capability of OL-1 was dependent upon the largess of other units.⁶

a. WHY WAS IT SELECTED?

Telephones were selected primarily because they were available; however, they did not provide the ultimate in a rapid and reliable means to contact distant rescue control centers and detachments. Telephones remained as a vital mode of communications throughout the period, but they were not adequate in terms of mission prosecution. The JSARC could not depend on a line being readily available to pass vital information and instructions to the rescue control centers or detachments.

Direct hot lines to the rescue control centers and detachments were selected to overcome the problems associated with the "community"

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type telephone. These lines provided instant contact and eliminated the problems associated with SSB and HF radios. They were easier to use than radios and permitted the discussion of matters, not pertinent to the aircrews, without cluttering radio frequencies for extended periods.

SSB radios were selected to provide a long-range communications capability among the SAR controlling agencies and at the same time permit communications between the controlling agencies and mission aircraft. Initially, the SSB net was established as the primary mode of communication between the JSARC and OL-1 and OL-2; and the direct hot line was requested as a backup for this system. However, upon installation of the direct hot lines, they became primary; and the SSB net was reverted to a backup status.⁷ The SSB installations remained the primary method of contact between the control centers and the airborne SAR control aircraft that coordinated ACR missions from their advanced orbit positions. SSB also provided a means of communication between rescue control centers and U. S. Navy SAR forces operating in the Gulf of Tonkin.

VHF and UHF radios were selected to provide short-range communications between the control centers and mission aircraft. A gap still existed in this area when U. S. Army aircraft were conducting SAR activities controlled by the centers. This gap was filled with FM radios that were borrowed from the U. S. Army.

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b. WAS IT DESIGNED FOR THIS TYPE OF TASK? None of the communications equipment used by the JSARC and the RCC's was designed specifically for their use. It was all general purpose equipment provided to perform the communication function.

c. WAS IT USED PROPERLY?

Each piece of communications equipment was used to perform its proper function as it was installed. When new equipment could more efficiently perform a particular function, it assumed the primary role in that area. Old equipment reverted to secondary roles in those instances and assumed primary roles in more suitable functional areas. This provided for a continuous improvement in communications capability and allowed more flexibility in daily operations.

Telephones were initially utilized for long and short-range communications between the JSARC, RCC's and detachments. When the SSB net was installed, it provided a faster mode of communication for the processing of essential mission data. The telephone then lost its primary function in this area but continued as a method of conducting administrative and other routine business.

The installation of direct hot lines provided a more suitable means of contact between the JSARC and other land SAR agencies than did the

normal telephone circuits or the SSB. The SSB then became a secondary method of point-to-point land communications and assumed the primary function of long-range ground-to-air communications.

OL-1 was required to use HF communications for all ground-to-air traffic until September 1967. This was necessary because they did not have VHF or UHF equipment prior to this time.⁸ However, VHF and UHF radios were primarily used by the other SAR control agencies to coordinate short-range mission activities. VHF and UHF radios became the short-range ground-to-air communications mode for OL-1, as they were made available, while FM radios were used in this role when U. S. Army forces were utilized to prosecute SAR missions.

JSARC communications capabilities were effectively increased when the airborne mission commanders were placed aboard fixed-wing SAR aircraft. These aircraft orbited advanced positions and provided an intermediate link between the JSARC and ACR forces.

d. DID IT PERFORM AS EXPECTED? Since the communications equipment was oblivious to its operational environment, with respect to wartime or peacetime conditions, it performed exactly as expected.

e. WHAT WERE THE DEFICIENCIES?

The major deficiencies of the telephone system were the

non-availability of circuits and the inability to clearly hear the other party once contact was established. Nearly all correspondence from personnel who served with the SAR forces in SEA contained complaints of the above deficiencies.

Inadequate telephone facilities made telephone contact with detachments almost impossible during the daytime. The large number of high priority calls overloaded available circuits during daylight hours and resulted in helicopter pilots having to launch on missions without first making contact with the JSARC.⁹ This on occasions resulted in a duplication of effort since the JSARC did not know that a detachment had knowledge of the SAR requirement and had committed their forces.¹⁰ Even when telephone contact was made, the ability to pass on vital information was often impaired by the inability of both parties to hear.¹¹ This latter condition could not be overcome, and it was sometimes necessary to resort to poor communications discipline to overcome the first. During mission prosecution, an ops immediate call was placed; and the line was held open for mission duration. Sometimes this continued for several hours.¹²

The problems associated with operating HF radios were the same as would have prevailed no matter what function they supported. The use of SSB for ground-to-ground communications cluttered frequencies that were required for ground-to-air and air-to-air traffic. Additionally, reception

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was minimum satisfactory or below between the primary control centers and the airborne mission commanders for approximately 15% of the time. To combat this loss of effectiveness due to poor propagation, weather phenomenon, etc, antenna facilities to accommodate additional frequencies had to be erected.¹³ Another problem with SSB was that clear and ungarbled reception could never be guaranteed; however, this was characteristic of all HF communications.

2. WHAT ELSE WAS AVAILABLE?

To properly analyze this question, it must be addressed in terms of the time required to obtain equipment that was always needed.

All of the equipment that was installed in the JSARC and the RCC's during this time frame was available to the Air Force before January 1965. The Air Force and ARRS also knew the JSARC communications requirements and what equipment would most effectively meet those requirements, prior to January 1965. Telephones, direct hot lines and radios (UHF, VHF, FM and SSB) were the only feasible means of communications available. The proper mix of this equipment, properly located, could have adequately supported an effective JSARC at any time the installation was completed.

WHY WAS IT NOT USED?

The available equipment was ultimately used; but again, any lack

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of use was in terms of belated installation rather than non-availability.

The date that the SSB network between the JSARC at Tan Son Nhut and OL-1 and OL-2 was requested could not be determined. The installation was not completed until December 1965.¹⁴ In November 1965, the request for direct land lines between the JSARC and the control centers at Da Nang and Udorn was submitted. This request was resubmitted in February 1966.¹⁵ The installation was completed in July 1967. Also, the direct land lines between the JSARC and the LBR/ACR detachments in Vietnam were not installed until early 1968.¹⁶ The date of the last request could not be determined.

In 1963-64, VHF, UHF, and HF radios were requested for a control center at Da Nang.¹⁷ However, it was May 1967 before the RCC received a VHF set that was loaned to them by the JSARC. UHF became available in March 1968 when the center moved into the new TACC facility at Son Tra AB.¹⁸

Excuses or reasons for VHF and UHF equipment not being promptly installed were not found. Reasons for the delayed installment of direct land lines were furnished by the 3d ARRGp Commander.¹⁹

. . . . MACV concurred with the requirement and placed it on the waiting list. Current information from 7th AF communications indicates that: (1) There are 85 circuits in SEA that have been validated and awaiting channelization. (2) MACV establishes and controls priorities for direct lines in this theater. (3) 7th AF

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and PACAF has been unable to apply any pressure upon MACV to obtain more lines. (4) Until additional equipment is received, every new line issued must be taken from its present user. . . .

Efforts were continuously made to improve the communications nets within the 3d ARRGp.²⁰ As late as July 1966, better UHF equipment was still being installed in the JSARC at Tan Son Nhut. The installation of a new UHF set was considered to afford the JSARC better communications coverage than the local Ground Controlled Intercept (GCI) site. The equipment was flight tested to 170 Nautical Miles (NM) at 20,000 feet and 70 NM at 1,500 feet.²¹ This improvement trend continued, and in August 1967 the 3d ARRGp Commander reported the installation of new communications equipment had begun.²²

In summary, suitable communications equipment was available for use in the JSARC prior to and throughout the time period, but not on a timely basis. Installation of this equipment, in a scattered fashion, over a long span of time, finally provided a workable SAR communications network.

3. ADDITIONAL CONSIDERATIONS: None.

4. SUMMARIZE LESSONS LEARNED:

The initial SAR control agencies were not equipped to meet their

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communications demands.

Had the initial forces placed in SEA to control SAR activities been deployed with a sufficient number of VHF, UHF and SSB radio sets, a suitable SAR communications network would have been realized sooner. Time delays caused by waiting for equipment would have been avoided. The concept of collocating the rescue and tactical aircraft control elements is excellent, but communications traffic becomes too congested for both to utilize the same communications equipment.

5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

That rescue control teams, equipped with support kits, be established for deployment with SAR forces.

The establishment of forward SAR control teams within various ARRS units would make initial SAR control personnel immediately available for contingencies. Among other required equipment, they should have specified numbers and types of communications sets. Namely, UHF, VHF and SSB. FM transceivers should also be included if U. S. Army forces are to be involved in the

contingency. SAR aircrew members were not deployed without their aircraft; by the same token, SAR controllers should not be deployed without their "tools of the trade."

HARDWARE ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Monthly Letter, 4 Jan 1966, p. 2.
2. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 6 Jul 1966, p. 5.
3. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 7 Aug 1966, p. 3.
4. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 11 August 1967, p. 1.
5. Ltr, Hq ARRS (AROCPR/Maj Crouch) to Hq ARRS (ARXLR/Lt Col Crozier), Subj: Corona Harvest, undated, pp. 3-4.
6. Ltr, Hq ARRS (AROOPR/Maj Orr/5818) to ARXLR (Lt Col Crozier), Subj: Corona Harvest Study, 1 Nov 1968, p. 2.
7. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 6 Jul 1966, op. cit., p. 5.
8. Orr, 1 Nov 1968, op. cit., p. 2.
9. Ltr, Capt Gordon L. Hall to Hq ARRS (ARXDC), Subj: Corona Harvest Study, 21 Nov 1968, p. 2.
10. Ltr, ERSTN (Capt Heeter/5352) to Hq ARRS, Subj: Corona Harvest Study, 23 Oct 68, p. 1.
11. Ltr, Major Ronald L. Haglund to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, undated, p. 1.
12. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 6 Jul 1966, op. cit., p. 5.
13. Ibid.

(HARDWARE ANALYSIS Footnotes - continued)

14. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 4 Jan 1966, op. cit., p. 2.
15. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 6 Jul 1966, op. cit., p. 5.
16. Crouch, undated, op. cit., pp. 6-7.
17. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, p. 2.
18. Orr, 1 Nov 1968, undated, op. cit., p. 2.
19. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 6 Jul 1966, op. cit., p. 5.
20. Ibid.
21. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 7 Aug 1966, op. cit., p. 3.
22. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 11 August 1967, op. cit., p. 1.

PERSONNEL ANALYSIS

1965 - 31 March 1968

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WERE THERE ENOUGH PEOPLE?

There was a considerable increase in the number of personnel assigned to the JSARC function during the 1965-68 time frame; however, they were, for the most part, the personnel required to man the newly activated rescue control centers at Da Nang and Udorn.

On 1 July 1965, Detachment 3 of PARC was redesignated the 38th Air Rescue Squadron (38th ARSq);¹ the JSARC becoming a sub-function of squadron operations. No change in personnel authorization or manning occurred in the JSARC due to this redesignation.²

On 8 January 1966, Air Rescue Service was redesignated as the Aerospace Rescue and Recovery Service. Concurrently, the 3d Aerospace Rescue and Recovery Group (3d ARRGp) was organized at Tan Son Nhut, with the JSARC becoming a sub-functional element of the Group. At this time, two satellite rescue control centers were organized as Det 1, 3d ARRGp, Da Nang AB, Vietnam, and Det 2 of the 3d ARRGp at Udorn AB, Thailand.³ The two RCC's had been functioning as sub-control centers for approximately one year prior to the official activation in January 1966.

The RCC's were introduced into SEA prior to 1966 to meet the ever-expanding requirement for SAR control, and were manned by TDY personnel until formally designated as Dets 1 and 2. Each of the two RCC's were authorized three officer and three NCO Rescue controllers who were provided from Pacific Aerospace Rescue and Recovery Center resources. They were supplemented with non-SEA resources from ARRS CONUS and Atlantic units until PCS personnel arrived between the last week in April and early June 1966.⁴

In January 1967, Hq PARRC and Hq ARRS were made aware of a requirement for ground radio operators to man the JSARC and the two RCC's. Apparently, 7th AF had been providing this support previously. Since ground radio operators were not among the authorized or assigned skills within ARRS, Hq Military Airlift Command was requested to authorize and man the three ground radio operator positions required at each of the three locations (three at the JSARC; three at Det 1 at Da Nang which had been relocated to Son Tra AB and designated as OL-1; and three at Det 2, Udorn which had been designated as OL-2). Until PCS personnel arrived in December 1967, the requirement for radio operators was fulfilled on a TDY basis.⁵

Two additional officer Rescue controllers were authorized at both OL-1 and OL-2 in November 1967; at the same time, authorization was

received for the ground radio operators. These additional controller positions were not manned until January 1968 when PCS personnel arrived.

2. WERE THEY THE RIGHT PEOPLE?

Even after the JSARC was permanently organized in SEA as Det 3, the full potential of available Rescue controller skills, knowledge, and techniques was not completely understood or utilized.⁶ Many comments made by former ARRS officers in SEA during this time frame indicated strongly that the lack of controller knowledge of tactical operations, equipment capabilities, etc. posed a rather serious problem. For example, a detachment commander, stationed in the RVN during 1966-67, made the following comments about JSARC controllers:⁷

The last major problem area was with some of the JSARC Controllers. The training they initially received was primarily for the out of country operation, but very little, if any, for the in-country operation. There were some outstanding Controllers, but they were the exception rather than the rule. Many did not know the avionics equipment on the HH-43, were not aware of hostile forces in a particular area and were not fully aware of our operational limitations. I will not dwell on this subject, but will cite a few examples that I can remember:

On one of the search missions, one of the controllers who had been working in JSARC for about ten months suggested that I put a ground party in the area. I honestly thought he was joking. The search area was very mountainous, covered with primary jungle and there was a known VC force of about 250 men operating within two or three miles of the primary area.

After receiving a request from the Cam Rahn Bay Command Post to send one of my "F" models down to coordinate an over water search with Navy Swift Boats, a Controller in JSARC told me to let the Detachment at Cam Rahn Bay do it. I told him that the only radios that the boats had were FM and he still did not know why we were needed, and I had to explain that the "B" models only had UHF.

On several occasions, JSARC attempted to send us out on a beeper signal, even at night, prior to determining whether or not an aircraft was missing. We would go out during the day if we could get a couple of HU-1 gunships, and check them out about 5,000 feet off the ground, but not at night. On every occasion, when the gunships got into the area, the beeper would stop. The last one of these they wanted me to check was exactly on top of a known VC, 50 caliber gun position. (We did not go.)

Some of the controllers did not understand the GRID ZONE System used for ground positions by all U. S. Army ground and aviation units, FACs, and the DASCs, and would have difficulty locating a position with a Grid Reference. On one occasion, a controller attempted to convert the Grid Position to longitude and latitude to give to us. He made a 25 mile mistake and delayed the overall operation.

Another detachment commander, stationed in Vietnam during the same time frame, supported the above comments with the following statement,⁸

Second major problem area was the concept of rescue operations of the JSARC. So many aircrew recovery missions were directed by JSARC duty controllers who had not the slightest idea of helicopter operations or limitations. Example - One duty controller thought the HH-43 always carried an internal auxiliary fuel tank which gave it a total range of 4-5 hours. This was never the case in detachments whose primary mission was

LBR and not ACR. So when there was only one H-43 operationally ready and it was defueled due to high temperatures to accommodate a FSK and firefighters, some of the JSARC Controllers could not understand why it would take 10-15 minutes to become airborne on an ACR Mission occurring some distance from the airbases. The time delay was due to the requirement of "topping" off the fuel in the helicopter.

The last problem area had been corrected in the JSARC before I left SEA. However, the first area could not be corrected. In future operations involving the establishing of LBR's by TDY personnel, the selection of personnel should be made carefully to insure the best qualified are selected.

On the subject of operational concepts, one detachment commander
(1967) had this to say:⁹

. . . . many SAR missions were denied us by the JSARC because of their concept of "Hot areas." Most of the times we called them for permission to prosecute a mission we were denied. Their denials were generally based on incomplete intelligence information about the area.

In 1966, the 3d ARRGp Commander made the following statement, which quite appropriately addressed the question -- WERE THEY THE
RIGHT PEOPLE?¹⁰

During April we are scheduled to receive 8 New Officer controllers of a total of 12 authorized. From the information available to us, none of those being assigned have any previous rescue or controller experience. This situation will place a heavy responsibility upon the 4 presently assigned controllers and supervisory personnel until the new officers can be adequately trained.

The comments rendered by the three detachment commanders were, of course, made subsequent to the above statement by the 3d ARRGp Commander and, as such, indicated that obtaining the right people to man the JSARC was not a temporary problem. In June 1966, the 3d ARRGp Commander reported that seven officer and nine airman controllers had reported for duty. Six officers and eight airmen had already completed the indoctrination training program and been assigned to shifts. He reiterated that none of the officers had prior Rescue or controller experience but anticipated that they would progress rapidly and provide stability due to the fact that the JSARC and the RCC's were now fully manned with PCS personnel.¹¹

3. WERE THEY ADEQUATELY TRAINED?

The TDY controller personnel provided from ARRS resources were, for the most part, experienced Rescue controllers requiring only that training necessary to familiarize them with SAR control in the combat environment. The initial PCS personnel were selected in accordance with USAF oversea selection criteria, and were generally qualified in their Air Force specialties, which did not qualify them as Rescue controllers. Generally, they possessed little or no knowledge of SAR tactics, techniques and procedures. Higher headquarters was advised of the problem and requested to furnish only Rescue-trained personnel in the future.

All subsequent Rescue controllers were requisitioned with a

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requirement to have Rescue controller experience, or to complete a Rescue Controller Training Course. Initially, officers were scheduled for 30 days training at the Coast Guard SAR School, Governors Island, N.Y., and the airmen were given a 30-day OJT course, established at the Hq ARRS Command Post, prior to departing the CONUS. In 1966, a Joint Air Force/Coast Guard SAR School was established at Governors Island, N.Y. and all Rescue controllers (officers and airmen) have since been required to complete this course prior to departing the CONUS for SEA. Due to the human error element, some controller personnel arrived in SEA who were not qualified. These personnel were returned to the CONUS for training or given on-the-job training at their duty location, according to the desires of the 3d ARRGp Commander.

Although Rescue controllers completed the required SAR course before their arrival in SEA, a certain amount of orientation and training in local procedures, problems, tactics, etc. was required at their SEA duty location. The same local training was required for ground radio operators, although they were qualified in their Air Force specialty.

4. WAS THE REPLACEMENT/ROTATION PROGRAM ADEQUATE?

This question must be addressed in much the same manner as it was for the earlier time frame. Under USAF criteria, the replacement/rotation program was considered adequate; however, its adequacy could

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only be viewed in the light of the fact that the majority of personnel rotated upon completion of the 12-month PCS tour. The rotation program, when applied to unit effectiveness, must be considered inadequate.

As one senior controller, assigned to the JSARC from April 1967 to April 1968, stated:¹²

For many people who served a tour in SEA it was their first experience in rescue work, particularly controllers - officers and NCO's. Through no fault of their own, by the time these individuals were trained and experienced to the point they were really producing, their retainability in SEA would be limited - usually only a few months. I do not recommend extending the tour length because the one year tour rule was probably the greatest single morale factor for personnel assigned to SEA. Overlapping of tours as much as possible is perhaps the best solution to prevent personnel from rotating at close intervals.

The 1967-68 Commander of the Rescue Control Center at Son Tra AB pointed out the impact that a rotation "hump" in the controller and radio operator field had on the effective operation of the RCC:¹³

When I arrived at OL-1, there were three other officers assigned, one of which was due to rotate within one month. Another was due to rotate in September 1967. The other officer had arrived in late February 1967. Two other officers were due to report in within one month. This type of personnel planning produced a "hump" in officer rotation. Part of the responsibility for this "hump" rests with 3rd ARRGp because of their reassignment of personnel to locations other than those to which they were originally assigned.

A rotation hump was produced in the NCO controller field also, apparently caused by the same factors which induced the hump in the officer rotations. In addition OL-1 had to be augmented by TDY personnel to keep the NCO controller strength at an acceptable level. The unacceptable aspect of the rotational humps was the fact that both humps occurred simultaneously, causing an almost complete turnover of qualified controller personnel within a three month period.

Until December 1967, OL-1 had no PCS radio operators. Two or three radio operators were TDY to OL-1 at all times until December. These personnel were not always from within ARRS resources and had to be trained in SAR procedures resulting in a loss of effectiveness. With the input of PCS personnel, another hump was created as all radio operators were assigned during a two month period.

Personnel assignment or manpower validation criteria failed to recognize the need for continuity, particularly, in areas where 12-month assignments were utilized. On an overall USAF basis and in the average USAF organization, the debilitating effects of this lack of overlap and continuity could be minimized by inflicting abnormal workloads on other members of the organization. This condition in itself created an adverse effect on the morale of both arriving and departing personnel, which in turn impacted on mission effectiveness.

5. DISCUSS ANY PERSONNEL DEFICIENCIES:

Personnel deficiencies that were cited for the 1962-64 time period held true for the 1965-68 period as well, and will be re-stated in this section.

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Personnel deficiencies as they applied to the JSARC function, for the most part, will apply also to the LBR and ACR functions. They will be addressed again in each package in order to provide three volumes that are generally independent of each other.

PCS personnel assigned to duty as JSARC controllers during the 1965-68 period were selected under Air Force selection criteria contained in AFM 35-11 and AFM 39-11. This criteria provided for equitable oversea selection within a given Air Force specialty. Unfortunately, a controller AFSC, as it applied to MAC, TAC, ADC or SAC, did not qualify the individual as a Rescue controller or vice versa. These controller personnel were trained on-the-job at their duty location. The alternative would have been to return them TDY to the CONUS or PARRC, and go non-operational until TDY assistance could again be implemented. Corrective action was taken by Hq ARRS to insure that all future Rescue controllers, if not already experienced in SAR tactics, techniques and procedures, would be required to complete a SAR training course.¹⁴

The Personnel Data System did not provide a means of identifying special experience of individuals after they had been reassigned from one unit to another. An airman Rescue controller, after he departed an ARRS unit for a unit of another major command, was identified solely as a command and control specialist, technician, or superintendent, AFSC 27430/27470/27490.

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Each major command had a course of training for command and control (274XO) personnel, which was a mandatory requirement for completion prior to an individual becoming qualified to perform duty in that command. This training was mandatory, due to the variance in tactics, techniques and procedures existing in each command. Due to this requirement, approximately 30 days training was involved each time an individual was assigned from one command to another. Special Experience Identifiers could have precluded retraining, or at least reduced it. SEI codes have now been established by Air Force and are in the process of being implemented in phases, due to the vast workload on Consolidated Base Personnel Offices (CBPO's).¹⁵

In conjunction with requisitioning of personnel, required training prior to arrival at a new unit was necessary to ensure that initial assignees or replacements were properly trained for their new job. These training requirements were submitted by the gaining unit on an AF Form 403, through command channels. At each level of command, the submission, non-submission or accuracy of data was subject to the human error element, which resulted in some personnel arriving at their new unit without completion of pre-requisite training. If sufficient qualified personnel were assigned to the unit when the untrained individual arrived, the commander had the option to return the individual to the CONUS for training or to train him on-the-job. The JSARC and RCC's in SEA had austere authorizations;

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therefore, rather than lose a controller completely and operate with a shortage, the 3d Group Commander trained unqualified newcomers on-the-job. Required training prior to reporting to an ARRS unit could have been, and was subsequently identified for each AFSC - officers and airmen. Such prerequisite enroute training could have been programmed into the computerized Personnel Data System at Air Force and major command level, for each AFSC, by command. This would have eliminated the human error element that existed, thus reducing the heavy workload at unit level. The initial assignment cards would contain codes identifying all required training, and servicing CBPO's could determine, by personal interview and screening of available personnel data, whether all or only part of the training would be required for a particular individual. This would eliminate, to a great degree, duplication of training which occurred quite frequently. ARRS, working closely with MAC (MAPDC), assisted in preparing such a proposal to the USAF Military Personnel Center (USAFMPC) for inclusion in AFM 36-11 and AFM 39-11. A forthcoming change to AFM 39-11 will contain the suggested training identification codes. Inclusion of the suggestion in AFM 36-11 and AFM 30-3 is still pending USAFMPC decision.

The normal personnel lead time for requisitioning was nine months for officers, and six months for airmen. Out-of-cycle requisitions resulted in arrival of personnel in SEA, approximately four to five months after

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submission of the requisitions. The rapid buildup of ARRS units in SEA often resulted in establishment of units manned by TDY personnel, from non-SEA ARRS units, until PCS personnel could arrive. Under limited war-time conditions, new units were created quickly and required to be operational very soon after they were established. Peacetime PCS assignment selection policies precluded rapid assignment fulfillment required by a limited war situation, such as SEA.¹⁶

In April 1968, Hq MAC (MAPDC) assumed manning responsibility for ARRS SEA units. Personnel requisitions were prepared at MAC from current unit manning documents and personnel data from the Personnel Data System (PDS). USAFMPC filled these requisitions by allocating line numbers to MAC and levying major commands to provide specified persons having the required AFSC.¹⁷ Many qualms existed concerning the practicality of using this system before known existing discrepancies in the PDS could be corrected. The validity of the concern was proven in late 1968 when the first personnel selected under this system began to arrive. Some personnel arrived several months late, and some failed to arrive at all; meanwhile, personnel in SEA units rotated to other non-SEA assignments. The SEA units had names or line numbers of replacement personnel assigned to them, but not the total personnel required to accomplish the work. MAC did not requisition personnel because the personnel manning data showed

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SEA units to be 100% manned. Units began to complain about personnel shortages due to late reporting and "no shows" (personnel scheduled into a unit who never reported for duty). TDY assistance was provided from non-SEA ARRS resources where critical shortages existed and priority out-of-cycle manning actions were implemented. The reasons for the "no shows" was determined after much time and effort on the part of personnel at all levels of command (detachment up to Hq MAC). Late reporting was due to individuals being granted a delay in reporting or being released from a SEA assignment, due to a justified reason and a replacement being furnished. The "no shows" were due to individuals being released from the SEA assignment due to a justified reason, but no replacement being furnished. In both instances, correction of reporting dates or withdrawal of names or line numbers from the computerized Personnel Data System was not being done. Manual verification of personnel assigned by head count was necessary to determine the number of personnel by grade, name and AFSC assigned each unit. This data was collected, compiled and submitted to MAC by ARRS (ARPDG) so that out-of-cycle manning requisitions could be submitted. All ARRS units in SEA were advised to closely monitor the personnel data products provided them by their servicing CBPO; to take prompt action through their servicing CBPO to correct all erroneous data on these PDS products; to aggressively follow-up on required corrections and to advise ARRS (ARPDG) if their efforts were non-productive within a reasonable period of time.

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Hq MAC would be advised if servicing CBPO's failed to provide the necessary support to the units.

Units had to be manned on a TDY basis when the following situations occurred:

Replacements reported late and PCS incumbents had completed their SEA tour and departed.

Scheduled replacements were released from SEA assignments, due to priority diversion or other valid reasons, without selection of other individuals to take the SEA assignments. PCS incumbents would depart their SEA unit upon completion of the SEA tour, resulting in personnel shortages.

Unprogrammed personnel requirements were created by sudden establishment of new units, or sudden expansion of already established units.

Slippage or cancellation of previously established prerequisite training for replacement or initially assigned personnel.

The above situations not only created a personnel deficit in the non-SEA units providing the required TDY assistance, but also reduced future experienced SEA personnel resources. This was due to the TDY time in SEA

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being deducted from the required one-year tour when an individual was selected to perform his first involuntary SEA assignment.¹⁸

Although the JSARC functioned as a joint operation, it was manned only with Air Force personnel until October 1967. At that time, a U.S. Army representative was assigned to function as a liaison officer. This was a great improvement, since numerous SAR missions and communications searches involved Army aircraft. The home units of these Army aircraft were numerous and difficult to locate in order to obtain necessary information and coordination. Due to limited communications and flight-following facilities throughout SEA, a large amount of traffic was reported missing or overdue. A big share of the traffic in this category was U.S. Army aircraft. The assignment of the U.S. Army representative to the JSARC helped to relieve a large share of this burden.¹⁹

The JSARC was never manned with a U.S. Navy representative during the period January 1962 through the end of March 1968. However, Naval representation was available by telephone contact with the Navy operations duty officer representing the Commander of Naval Forces, Vietnam (COMNAVFORV). In addition, the Navy maintained a 7th Fleet liaison detachment (7th Fleet Det "C"), located in 7th AF Headquarters. During SAR missions involving Navy aircraft and personnel, the JSARC notified the 7th Fleet Det "C" duty officer who normally proceeded to the

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JSARC for a briefing on the progress of the mission. These procedures could not be accepted as constituting Navy representation to the JSARC.²⁰

6. WHAT WERE MAJOR FACTORS AFFECTING MORALE?

Two of the morale problems that were cited for the 1962-64 time period continued to plague Rescue personnel well into the 1965-68 period. An excessive amount of TDY was still required to offset the lack of continuity brought about by rotation, late replacements, etc. This was a major problem in that the personnel performing this TDY realized that they would most likely have to complete an unaccompanied tour in SEA and, even though the TDY time would be deleted from their PCS tour, it meant numerous interruptions to the family environment.

Another holdover from the 1962-64 period was the deteriorating "base of choice" policy for rotating SEA personnel. As the USAF forces in SEA increased, more personnel became eligible, which resulted in personnel requirements at preferred bases and geographic locations being exceeded to such a degree that USAF could no longer support the policy.

Morale problems that generated as a result of personnel procedures generally applied to all ARRS personnel, regardless of whether they were assigned to support the JSARC, LBR or ACR missions. This certainly was the case as pertained to the servicing of personnel records by the CBPO.

The main concern was accurate and timely inclusion of items in their personnel record data that affected promotion and reassignment. The inability of personnel to check their records, due to the CBPO being geographically separated from the SEA units, did not provide the individual the opportunity to determine if those items important to his Air Force career were accurate and up-to-date. Action was initiated toward the end of this reporting period further to disperse records to the CBPO's collocated with ARRS SEA units.

Another related problem to the servicing CBPO being geographically separated from the ARRS units was the late notification to ARRS and MAC noncommissioned officers of their new CONUS or oversea assignments.²¹

7. WHAT WERE THE SIGNIFICANT PERSONNEL ACCOMPLISHMENTS?

The most significant personnel accomplishment during this time frame was the fact that all new ARRS units activated were manned in time to meet scheduled operational dates. The organizational evolution that took place required 72 separate organizational actions to activate the 22 ARRS units that were in Southeast Asia at end March 1968.

Special selection criteria for the Chief of the JSARC/RCC's in SEA was established.

Training prerequisites were established for ground radio operators assigned to the JSARC/RCC's in SEA, in order to preclude extensive OJT.

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Approximately 6,000 decorations, ranging from the Medal of Honor to the Air Force Commendation Medal, had been awarded to ARRS personnel in SEA.

8. ADDITIONAL CONSIDERATIONS:

The JSARC was charged with the task of coordinating and controlling all SAR activity in the SEA sub-region, which totaled approximately 1.1 million square miles. The controlling agency was responsible for submitting the SAR information (mission report) in accordance with Aerospace Rescue and Recovery Service Manual (ARRSM) 55-2. Due to the large area of responsibility and the high level of daily SAR activity, it was an impossible task for the JSARC, under present manning, to prepare all mission reports along with their coordinating and controlling responsibilities and other tasks. The procedure in effect during this period required the unit prosecuting the mission or the sub-RCC controlling the mission to submit the required mission report.²²

9. SUMMARIZE LESSONS LEARNED:

a. The established practices, procedures and policies of the Personnel Data System did not provide a system capable of identifying special skills or qualifications required for ARRS controllers.

The initial and follow-on on PCS controller personnel were

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identified in accordance with USAF selection criteria. This permitted equitable oversea selection within a given AF specialty; however, a controller AFSC, as it applied to other commands, did not qualify the individual as a Rescue controller. Corrective action was taken during this time period to ensure that all Rescue controllers requisitioned for duty in SEA would have Rescue controller experience or attend the Rescue Controller Training Course.

b. The personnel requirement for ground radio operators to man the JSARC and RCC's was not identified on a timely basis.

Available documentation indicated that the requirement for ground radio operators was not made known to Hq PARRC or Hq ARRS until January 1967. Seventh AF had been providing this support previously. ARRS did not have manning authorization for ground radio operators, so Hq MAC action was required to authorize and man these positions. This necessitated TDY support of this function for almost one year.

c. The lack of controller knowledge of combat SAR tactics, techniques, operational concepts and SAR equipment capabilities degraded mission effectiveness.

JSARC controllers received initial training that was slanted toward the out-country operation, but received very little, if

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any, on in-country SAR procedures. Their lack of knowledge of operational limitations, in some instances, resulted in directed missions that were not operationally feasible for the SAR vehicles involved. On the other hand, missions were denied, due to incomplete intelligence information or an erroneous concept of "Hot Areas."

d. Inadequate personnel planning produced a rotation hump in the officer and NCO controller field, as it did in the ground radio operator career field.

This problem was not caused alone by inadequate personnel planning, or certainly could not be attributed to the planning that was conducted at the lower echelons. It was generally recognized at the "operating level" that lengthy TDY support of certain functional areas, until PCS authorization could be obtained, would result in an "all the qualified eggs in one basket" personnel concept. PCS manning authorizations were generally approved for a unit, resulting in almost total replacement of the TDY force with PCS personnel, and within a very short time span. This one action, in itself, compounded the felony in that rotation of this almost total PCS replacement force must take place some 12 months later. To have an

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almost complete turnover of qualified controllers and ground radio operators within a two to three-month period seriously diluted the capability of the JSARC and the RCC's to effectively prosecute the SAR control mission.

e. Peacetime PCS assignment selection policies precluded rapid assignment fulfillment required by a limited war situation, such as Southeast Asia.

Beginning in 1964 and increasing in tempo in 1965-66, the rapid buildup of SAR forces resulted in new units being activated almost overnight. These new units were created to meet operational demands and, as such, were required to be operationally ready almost before the ink was dry on the activation order. Tactical requirements in a rapidly developing combat environment cannot be tied to the slow, cumbersome personnel procedures that are normally identified with peacetime operations.

f. The JSARC in SEA has never functioned as a Joint Search and Rescue Center, due to the failure of the Army, Navy, and Marine Corps to provide representation as directed by JCS and the joint SAR directive.

It was not until October 1967 that an Army representative was assigned to the JSARC to function as a liaison officer. During

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the period January 1962 through end March 1968, the JSARC in SEA was never manned with a U. S. Navy or Marine Corps representative.

g. The JSARC was not adequately manned to prepare all SAR mission reports as directed by ARRSN 55-2.

The JSARC, in peacetime environment, could normally be expected to comply with this directive; however, the high level of daily SAR activity in SEA made this an impossible task for the JSARC.

10. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a through g, support, in the same alphabetical order, the lessons learned that have been listed above:

a. Special Experience Identifier Codes were established in AFM 300-4. Early identification and input of SEI's into the Air Force-wide PDS should have provided the necessary data to ensure selection of properly qualified personnel. In addition, en route training requirements should have been identified and initial assignment cards should have contained all prerequisite training for that specific AFSC in the gaining command. Air Training Command should have established quotas in the required courses

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upon receipt of a copy of the assignment card. The servicing CBPO, upon receipt of the assignment card, should have reviewed the assignee's records and, if all or some courses had already been completed, promptly canceled these courses. Training prerequisites should have been provided by each command and included in AFM 36-11 and AFM 39-11. This would have eliminated the requirement for individual units to manually submit training requirements on AF Forms 403 which were then consolidated at several levels of command, prior to reaching Air Force.

b. Identification of this personnel requirement should have been made sufficiently far in advance to permit normal manpower and personnel actions to provide authorized spaces and PCS personnel at the time 7th AF discontinued their support.

c. JSARC and RCC controllers should have received a thorough indoctrination on both in/out-country operations. This indoctrination should have included complete familiarization with the equipment capabilities of all SAR vehicles in the theater inventory. A certain amount of this orientation and training in local procedures, problems, tactics, etc. would have been required in-theater.

d. The introduction of PCS forces to replace TDY personnel in a combat environment should have received the attention of "top level"

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planning. The eagerness to provide PCS continuity to a rather fluid TDY situation needed to be tempered with a 12-month look into the future. The debilitating effects of this lack of overlap and continuity were rather vividly supported by the valid comments of previous SEA JSARC and RCC personnel. Personnel assignment or manpower validation criteria failed to recognize the need for continuity, particularly, in areas where 12-month tours were the "order of the day."

e. Manpower authorizations and personnel requisitioning procedures should have been streamlined to meet, on a timely basis, the demands of the tactical forces. These procedures, like new weapons systems, required modernization to keep pace with the state-of-the-art. The effectiveness gained by partial automation became lost in the maze of confusion that surrounded the outmoded procedures of manual verification of personnel by the head-count system. Filling personnel requisitions by allocating line numbers to a major air command, and then levying major commands to provide specified persons having the required AFSC's, did not guarantee timely or qualified replacements. ARRS units in SEA had names or line numbers of replacement personnel assigned to them, but not the personnel required to accomplish the task.

f. The JSARC should have been established as a Joint Search and Rescue Center, manned with representatives of all the Services providing

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supporting SAR forces. This should have been mandatory where the utilization of secondary SAR forces was required to support the total SAR requirements.

g. The procedure of requiring the unit prosecuting the mission, or the sub-RCC controlling the mission, to submit the mission report was considered adequate.

PERSONNEL ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. Hq PARC History, 1 Jul - 30 Sep 65
2. Conclusions of Staff Members, DCS/Personnel, Hq ARRS
3. MATS S.O. G-163, 3 Dec 1965
4. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 9 May 1966, p. 2.
5. Msg, MAC (MAPMA) 26431, 4 Oct 67.
6. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, p. 1.
7. Ltr, Major Ralph H. Bush to ARRS (ARXDC), Subj: Corona Harvest Study, 29 Oct 68, pp. 6-7.
8. Ltr, Major Charles R. Kay to ARXDC (Lt Col Crozier/5871), Subj: Corona Harvest Study, 3 October 1968, pp. 1-2.
9. Ltr, Det 13, Western ARRC/Major Elliff/232 to ARXDC, Subj: Corona Harvest Study, 10 October 1968, p.2.
10. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 5 April 1966, p. 3.
11. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 4 June 1966, p. 3.
12. Ltr, Hq ARRS (AROCPR/Maj Crouch) to Hq ARRS (ARXLR/Lt Col Crozier), Subj: Corona Harvest, undated, pp. 3-4.
13. Ltr, Hq ARRS (AROOPR/Maj Orr/5818) to ARXLR (Lt Col Crozier), Subj: Corona Harvest Study, 1 Nov 1968, p. 2.

(PERSONNEL ANALYSIS Footnotes - continued)

14. Trexler, undated, op. cit., p. 2.
15. Conclusions of Staff Members, op. cit.
16. AFM's 30-3, 36-11, and 39-11.
17. Msg, MAC (MAPMAAF) 24200 Apr 68, Subj: Oversea Requisitions and Enroute Training.
18. Ltr, Hq MAC (MACCS), Subj: Action Items Commander's Pacific Trip, 7-27 March 1967, 20 Apr 1967. w/1 Atch, Atch 1, p. 6.
19. Crouch, undated, op. cit., p. 1.
20. Ibid., pp. 1-2.
21. Ltr, Hq MAC (MACCS), 20 Apr 1967, op. cit., Atch 1, p. 3.
22. Crouch, undated, op. cit., p. 2.

SUPPORT ANALYSIS

1965 - 31 March 1968

1. HOW DID SUPPORT ACTIVITIES OR FUNCTIONS SIGNIFICANTLY
INHIBIT OR ENHANCE THE ACHIEVEMENT OF THE TASKS?

a. FACILITIES:

The facilities provided for the JSARC gradually improved during 1965-68. The ideal location for the JSARC was in the AOC and, likewise, the ideal location for the RCC's was with the TACC's. The JSARC was originally established in the AOC at Tan Son Nhut and was still operating from this location in January 1965. The RCC's at Da Nang and Udorn operated from their own facilities at this time and their collocation with the TACC's will be discussed later.

The facilities at Tan Son Nhut in 1965 were not adequate to house both the AOC and the JSARC. This inadequacy was primarily in terms of physical size versus volume of communications traffic. Since the most likely time for a SAR effort was during peak strike operations, the requirement for JSARC and AOC controllers to direct their respective missions from "each other's lap," so to speak, was not uncommon.

Efforts to secure facilities that would provide for better working conditions were continuous and, in April 1966, the JSARC moved into a new

building.¹ At this time, the control center was established in a 36' X 20' air conditioned room.² Though not ideally collocated in a suitable facility with the AOC, the advantages gained in terms of space, quietness and freedom of movement made the move a suitable interim measure. Approximately one month was required to overcome the frustrations associated with the move, but SAR control was never lost. Steady progress was made and by early May, makeshift lighting had been replaced by florescent lighting; wall maps had been redone and installed; and communications systems had been stabilized.³

As change seemed to be the most constant factor in other areas of endeavor, no less was the case with the JSARC. In April 1967, when the 7th AF directive that would establish a true Joint Search and Rescue Center was being prepared, plans were laid for the enlargement of the center. The renovation was planned to provide additional work space and banks of communications modules.⁴ Those provisions were to accommodate Army and Navy personnel who would be assigned to the center. The renovation began in August 1967.⁵

Again, change reared its head when the 7th AF Commander directed that the JSARC be relocated with the AOC.⁶ The AOC was not located in the same facility that it had shared with the JSARC prior to April 1966, but

had been re-established in a new building. In fact, when ground was broken for the construction of this new building, in late 1965 or early 1966, the then Commander of 3d ARRGp had hoped to someday have the JSARC housed there.⁷ The JSARC had less operating space in its new location, but the advantages of being collocated with the AOC negated this disadvantage. One problem that evolved from the limited space had not been resolved by the end of March 1968. The basic HF equipment remained in its old location and the JSARC controller had only slave equipment. This required a telephone call to a radio operator two blocks away, any time set adjustment was necessary.⁸

Detailed information with regard to the evolution of facilities provided to house the RCC at Udorn was not available. In March 1968, they were established in the 7th/13th AF CP facility and hoped to be relocated with the proposed alternate TACC at Udorn.

The only available account of the RCC facilities at Son Tra AB covered the May 1967 to May 1968 period. Those comments were:⁹

My arrival at Monkey Mountain occurred six weeks after the move of OL-1 from Danang AB. At that time, some of the enlisted personnel were living in tents. Officers were living in the halls of the BOQ. In June 1967 a self-help project BOQ was completed alleviating the officer situation. A new barracks for enlisted personnel was completed in July. In August three Porta-Kamp trailers arrived. These trailers were

designated as quarters for the officer personnel. Erection of the trailers, installation of the plumbing and the water and sewer lines to the trailer area, and all the other work required to make the trailers habitable was accomplished by the personnel of OL-1.

One of the provisions of the agreement to allow OL-1 to move to Monkey Mountain was a requirement for ARRS to furnish living quarters for its personnel. Efforts by Hq 3 ARRGp to procure the necessary quarters prior to the move on 1 April 1967 were unsuccessful.

In April 1967, the TACC was located in a quonset type tent building. OL-1 was assigned a portion of this building for its work area. The TACC was scheduled to occupy a new building in mid-March 1967, but delays in completing the building delayed occupancy until early November. Every effort was made by the Commander of the TACC to ensure that the area assigned to OL-1 in the new building contained all the facilities required to accomplish the mission.

b. LOGISTICS:

Establishment of a JSARC required three essential elements -- people, housing facilities and communications equipment. Therefore, logistics support must be viewed in the light of communications equipment acquisition.

A constant flow of equipment, comparable to that of a flying organization, would not be the case once the JSARC was adequately equipped. Yet, logistic support for the JSARC seemed to be a rather elusive matter. It was apparent from the Hardware Analysis, pages 173 through 184.

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that the personnel deployed to establish the SAR control centers were not deployed with the required communications equipment. It was also apparent from the Hardware Analysis that long delays were experienced in acquiring that equipment, once personnel were established in the theater. A combination of several factors probably contributed to the delays encountered.

The 7th AF statement that they were responsible for the beddown of ARRS forces in SEA, but that MAC was responsible for their equipage, could have had an adverse effect on the receipt of JSARC equipment.¹⁰ Although this statement was made with regard to the acquisition of aircraft, it was impossible to determine the interpretation applied to the statement throughout the logistics community.

The collocation of the JSARC with the AOC, though an operational advantage, definitely influenced the timely support of the JSARC communications requirements. The equipment provided for the AOC was not adequate for the control of both tactical and Rescue forces, but the general opinion of all, except those closely associated with mission prosecution, seemed to be that it was adequate. The control of tactical forces was the primary function of the AOC; consequently, the natural tendency was for the JSARC to lose its identity. These factors were hard to overcome and resulted in unnecessary delays in acquiring communications equipment for the JSARC.

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The discussion of communications equipment, and its receipt by the JSARC and RCC's, in the Hardware Analysis indicated one or more of the following:

- (1) SAR forces were extremely low on the communications equipment priority lists.
- (2) The AF inventory of communications equipment had dropped to a dangerously low level.
- (3) SAR forces either did not make their requirements known to the proper people, did not submit requests on a timely basis, or did not initiate proper follow-up actions.

A review of all available information indicated that items (1) and (3) above were factors that contributed to inadequate logistics support. There were strong indications that item (3) provided the major contribution to this inadequacy. Particularly, in terms of not making the requirements known to the proper people and not taking the proper follow-up action after making an early determination of what was needed.

c. WEATHER:

Weather data was an important factor in JSARC operations. The ability of the JSARC controller to pass current and forecast weather to recovery aircrews influenced mission success in several ways. Weather in the recovery area, en route, and at destination directly affected loiter time

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in the area. At the same time, the controller's knowledge of general weather conditions influenced his deployment of forces.

During the time the JSARC was located in the AOC, weather personnel were immediately available. However, a phone call was required to update weather data during the time that the AOC and the JSARC were located in different buildings.

The absence of complaints about the weather support rendered, indicated that weather service was adequate. Precise data was not available for remote areas that did not have data collection facilities, but forecast data was available.

d. INTELLIGENCE:

During the 1965-68 period, a notable but almost imperceptible move was made in the direction of providing ARRS forces in SEA a viable, effective intelligence system that was so badly needed. This move was in the form of authorizing and manning an intelligence officer position in 3d ARRGp.

This action was a step in the right direction and provided one small facet of an ARRS intelligence system tailored to provide the timely, accurate, specialized operational intelligence so badly needed by SAR controllers and aircrews to contribute to proper SAR mission decision making and successful SAR mission prosecution.

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e. COMMUNICATIONS:

The nature of the JSARC function was not conducive to the separate independent discussion of hardware, logistics support, and communications support. Therefore, the discussion of each topic, within this time frame, necessarily overlaps the other two. For that reason, a certain amount of redundancy could not be avoided in a detailed discussion of communications support. A chronological sequence of events, with respect to the request for and the installation of communications equipment, was offered.

The required communications capabilities of the JSARC were known to ARRS personnel in SEA prior to January 1965. They were subsequently spelled out in PACAF SARPLAN 120-67 as follows: ¹¹

. . . . Centers must have rapid and reliable communications with:

Primary and secondary SAR forces and agencies.

Air Route Traffic Control Centers

Air Defense Centers, Combat Operations Centers, Joint Operations Centers, etc.

AFCS Air/Ground stations and communications centers.

Radar and direction finding stations operated by the armed services, FAA, FCC, and ICAO.

Maritime agencies or coastal stations such as US Coast Guard stations, capable of providing positions of marine craft, alerting those craft and coordinating communications between such craft and the SAR Center.

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SAR aircraft, SAR advance base of operations and rescue terms.

Sources of meteorological information.

Commander, Pacific Aerospace Rescue and Recovery Center and operational control commanders.

Determination of the most suitable equipment, to establish the required communications nets, was a simple matter. However, the acquisition and installation of this equipment did not prove as simple. Communications support might best be reflected through the time required to obtain various types of equipment.

(1) The primary mode of communications at the beginning of this time frame was the overloaded telephone nets.

(2) The JSARC and each RCC had an HF set that had been installed by the center personnel, sometime prior to January 1965.

(3) In December 1965, a SSB net was completed between the JSARC and the two RCC's. Three SSB sets were installed in the JSARC and two in each RCC.¹² The date of this request could not be determined.

(4) In July 1966, a 20-channel TRAC 32 UHF radio was installed in the JSARC.¹³ The date of this request could not be determined.

(5) In May 1967, the RCC at Da Nang received a VHF set on loan from the JSARC.¹⁴ That equipment had been requested in 1963-64.¹⁵

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(6) In July 1967, direct hot lines were installed between the JSARC and the two RCC's.¹⁶ Those lines were requested in November 1965 and the request was resubmitted in February 1966.¹⁷

(7) In August 1967, a 10 kw HF radio was installed in the JSARC, along with VHF and UHF tape recording equipment.¹⁸ The date of this request could not be determined.

(8) Between October and December 1967, KY-3 secure telephone lines were provided for the JSARC to bases within Vietnam that had this secure voice capability.¹⁹ The date of this request could not be determined.

(9) In early 1968, direct hot lines were installed between the JSARC and each helicopter detachment in Vietnam, except one.²⁰ The date of this request could not be determined.

(10) In March 1968, UHF was made available to OL-1 RCC by the TACC upon their collocation at Son Tra AB.²¹ That equipment had been requested in 1963-64.²²

(11) It should be pointed out that, "Communications - Electronics Implementation Plan for PACAF Command and Control Search and Rescue SSB System" was published in early 1967. This plan provided for a permanent installation to replace the SAR HF/SSB mobile network in SEA. The Required Operational Date (ROD) established in the plan was FY 1/68, but the plan had not been implemented as of 31 March 1968.²³

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As pointed out in the logistics support discussion, there were some indications that ARRS personnel did not make their needs known to the proper authorities and failed to take proper follow-up actions in some instances. However, many occasions were evident where months, and sometimes years, elapsed between the submission of communications equipment requests and the actual installation of that equipment. Other instances show that some items requested were never received and that the equipment had to be borrowed from other sources to enable effective mission accomplishment. Therefore, it must be concluded that communications support was not adequate on a timely basis.

f. AIR REFUELING: Not applicable.

g. RESEARCH AND DEVELOPMENT: All facets of Research and Development were covered in Section V, Volume I, USAF Search and Rescue in Southeast Asia, 31 January 1969.

h. OTHER: None.

2. ADDITIONAL CONSIDERATIONS: None.

3. SUMMARIZE LESSONS LEARNED:

a. Failure to properly request equipment, plus failure to follow up on proper requests, equaled no equipment.

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Personnel must ensure that all requests for equipment are placed in the proper channels and pursue those requests until positive action is taken. Failures in those efforts sometimes produced avoidable delays in all support areas.

b. The limited intelligence support being provided ARRS units still was neither sufficiently timely nor SAR/recovery mission-oriented to permit proper mission planning relative to accurate assessment of conditions prevailing, or likely to prevail, in mission areas and along mission routes.

4. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a and b, generally support, in the same alphabetical order, the lessons learned that have been listed above:

a. That a requirement be established for deployed units to properly document and suspense all supply requests.

A simple suspense system and a record of all supply actions would enable the necessary follow-up on items ordered. Long delays in receipt of equipment would be avoided and units could justify their claims of inadequate support.

b. It is necessary to authorize and assign within the ARRS organization

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enough professional Intelligence Officers and NCO's to establish and generate a specialized SAR intelligence training, collection, processing and dissemination program designed specifically to satisfy ARRS peculiar intelligence needs for combat SAR mission planning, aircrew briefing and interrogation and post-mission reporting.

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SUPPORT ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Monthly Letter, 5 Apr 1966, p. 3.
2. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Monthly Letter, 4 Mar 1966, p. 3.
3. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Monthly Letter, 9 May 1966, p. 2.
4. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Monthly Letter, 6 April 1967, p. 5.
5. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Monthly Letter, 11 August 1967, p. 1.
6. Unit Histories 1 Jan - 30 Jun 1968, 3d ARRGp, Relocation of JSARC.
7. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Monthly Letter, 4 Jan 1966, p. 5.
8. Ltr, Hq ARRS (AROCP/Maj Crouch) to Hq ARRS (ARXLR/Lt Col Crozier), Subj: Corona Harvest, undated, pp 2-3.
9. Ltr, Hq ARRS (AROOPR/Maj Orr/5818) to ARXLR (Lt Col Crozier), 1 Nov 1968, p. 2.
10. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Monthly Letter, 7 Aug 66, p. 2.
11. Pacific Air Forces Integrated SAR/Air Recovery Plan (Short Title - PACAF SARPLAN 120-67), undated, Appendix I, Annex D, pp. D-I-1, D-I-2.
12. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 4 Jan 1966, op.cit., p. 2.

(SUPPORT ANALYSIS Footnotes - continued)

13. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 7 Aug 1966, op. cit., p. 3.
14. Orr, 1 Nov 1968, op. cit., p. 2.
15. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, p. 2.
16. Crouch, undated, op. cit., pp. 2-3.
17. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 6 Jul 1966, p. 5.
18. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 11 August 1967, op. cit., p. 1.
19. 39th ARRSq Hist. Oct - Dec 67, P090730Z Dec 67, p. 1.
20. Crouch, undated, op. cit., p. 2.
21. Orr, 1 Nov 1968, op. cit., p. 2.
22. Trexler, undated, op. cit., p. 2.
23. Communications-Electronics Implementation Plan for PACAF Command and Control Search and Rescue SSB System CEMPAC 2NFOOOR.

PLANS, CONCEPTS, AND DOCTRINE ANALYSIS

1965 - 31 March 1968

1. WERE PLANS AVAILABLE?

The only plan identified during the period which directly concerned the JSARC as such was ARRS Programming Plan (PP) 574. This plan which included the objective of activating the 3d Aerospace Rescue and Recovery Group, headquartered at Tan Son Nhut, provided sufficient manpower in the group to man the JSARC at Tan Son Nhut, with rescue control centers at Da Nang in the RVN and Udorn, Thailand. These units provided the SAR control structure within SEA.¹

A number of doctrinal and directive documents were published during the period which, generally speaking, reconfirmed the wartime SAR mission and served to clarify SAR relationships, channels, procedures and responsibilities at and among the various levels of command.

2. WHO WROTE THEM?

The ARRS Programming Plan was written by Hq ARRS, implementing direction from USAF and MAC, providing directive guidance for ARRS units involved and information to other agencies concerned.

The highest level of procedural guidance was provided by the

tri-service directive, AFR 55-7 (later 64-3), Army Regulation (AR) 525-90, Navy War Plan Supplement (NWP SUPP) 37(A), which prescribed wartime SAR procedures approved by the Joint Chiefs of Staff. This directive was written primarily by the Air Staff with full Army and Navy coordination.²

Announcement of USAF SAR doctrine in depth was made in AFM 2-36 entitled Operational Aerospace Doctrine; Search, Rescue and Recovery Operations. This document was written primarily by Hq ARRS; then was coordinated and published by the Air Staff.³

AFR 23-19, which had as its subject -- Organization and Mission - Field, Aerospace Rescue and Recovery Service, was rewritten by the Air Staff from AFR 20-54 and prescribed the policy, mission, organization and responsibilities of ARRS.⁴

PACOM published CINCPAC Instruction (CINCPACINST) 3130.2B to prescribe wartime SAR for U. S. military forces in the CINCPAC area of responsibility. This document passed to PACAF the SAR responsibility for the Pacific overseas region which included SEA.⁵

Pacific Air Force Regulation (PACAFR) 55-90, implementing this responsibility, was published by PACAF. Its stated purpose was to establish search and rescue responsibilities and outline the search and rescue organization within PACAF. It provided specific Southeast Asia SAR direction to the

7th AF Commander as a part of its coverage of SAR within the whole PACAF area of responsibility.⁶

PACAF SAR Plan 120-67 contained detailed instructions for implementation of PACAF Regulation 55-90. Its coverage was also, of course, much broader than just the SEA area but it contained much data directly applicable to the theater. It prescribed tasks for the 7th AF Commander, including operation of the JSARC and RCC's and operational control of ARRS forces assigned to the 3d ARRGp, through the 3d ARRGp Commander, with the exception of LBR units, which were to be controlled through the appropriate base commanders.⁷

Prior to this period, 13th AF had published a supplement to PACAFR 55-90 which passed to 2d Air Division (later 7th AF) SAR responsibility for the SEA sub-region. This responsibility had been assigned to 13th AF by PACAFR 55-90.⁸

Second Air Division Regulation 55-20 was published by 2d AD to prescribe the SAR operations in SEA, which was in response to the responsibility placed by the previously discussed 13th AF Supplement to PACAFR 55-90.⁹ Later an Army, Navy, Air Force and Marine Joint SAR Directive was published by 7th Air Force to promulgate the responsibility and authority for the conduct of joint SAR operations in the SEA sub-region pursuant to

the provisions of JCS Pub 2, National SAR Plan, CINCPAC Instructions 3130.1 series and 3130.2 series and PACAFR 55-90.¹⁰

Seventh Air Force also published 7th AFM 64-1 to outline the organization, command and control structure, composition of the SAR task force, the concept of operations, facilities and equipment and the procedures employed in the conduct of the SAR mission in SEA.¹¹

3. WHEN WERE THEY WRITTEN?

The ARRS Programming Plan 574 was published on 15 December 1965 with one change in January 1966. The command and control structure prescribed stated, in part, that the 3d ARRGp at Tan Son Nhut would be under command of PARRC. The 3d ARRGp would act as the JSARC and be under the operational control of the Area Commander/Second Air Division.¹²

The evolution of direction, external to the Pacific theater, included publication of the SAR doctrine manual, AFM 2-36, on 1 June 1965 and its re-issue with slight change on 3 January 1967. It presented operational doctrine and policies governing aerospace search, rescue and recovery operations for personnel and materiel, during both peace and war. It also provided guidance for personnel and activities supporting, being supported by, or coordinating with MAC/ARRS.¹³

The ARRS mission directive regulation, originally published as
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AFR 20-54, was republished on 2 December 1965 as AFR 23-19 in the Organization and Mission - Field series. On 14 March 1967, AFR 23-19 was rewritten with one change published on 11 April 1967.¹⁴

The tri-Service directive, AFR 55-7, AR 525-90, NWP SUPP 37(A), prescribing wartime SAR procedures was approved by the JCS to be used throughout the Armed Forces. It was published on 13 August 1965, re-issued, with minor changes, on 31 May 1967 and designated as AFR 64-3. The Army and Navy designations remained the same.¹⁵

Internal PACOM SAR guidance, starting at the top, in the form of CINCPAC Instruction 3130 series, evolved from .2A, dated 21 May 1959, which established standardized wartime SAR procedures for U.S. military forces operating in the CINCPAC area, and .1B, dated 10 June 1963, which documented civil and military SAR procedures in the PACOM. This broad SAR Instruction was re-issued as .1C on 25 June 1965. Change One to .1C, dated 21 November 1966, changed the responsibility for SAR coordination in SEA to the 7th AF Commander.¹⁶

The 1959 Wartime SAR Instruction 3130.2A was re-issued as .2B on 2 September 1967.¹⁷

PACAF direction evolved as PACAFR 55-90, dated 2 October 1963, through a re-issue, dated 20 March 1966, to a 15 November 1966 issue with

Change A published 16 June 1967. This PACAF series provided direction for both civil and military SAR and was responsive to CINCPACINST 3130.1 series.¹⁸

The implementing PACAF SAR Plan 120-67 was apparently published in 1967, but the specific date was not contained in the plan. It stated that it provided an overall SAR plan for the effective utilization of all available facilities for all types of SAR operations and included provisions for the control and coordination of forces contributing to the SAR effort.¹⁹

Thirteenth AF Supplement 1 to the 2 October 1963 PACAFR 55-90 had delegated SAR coordination responsibility for SEA to 2d AD.²⁰ This responsibility was reflected in 2d Air Division Regulation (2d ADR) 55-20 published 4 March 1966, which superseded 2d ADR 55-20, 14 January 1965, and 55-20A dated 1 April 1965.²¹

In November 1966, Change 1 to CINCPACINST 3130.1C gave the SEA SAR responsibility and authority to 7th AF, thus removing 13th AF from the SAR chain of command. Promulgation was by publication, 5 April 1967, of a joint SAR directive, 7th AFR 64-2, which was the Navy Forces Vietnam Instruction (NAVFORV INST) 3130.1; U. S. Army Regulation, Vietnam (USARV) 95-8; Commander, Seventh Fleet, Instruction (COMSEVENTHFLTINST) 3130.2; and Third Marine Amphibious Force (THIRD MAF) ORDER 003130.1.²²

On 1 March 1968, 7th AF Manual 64-1, SAR Southeast Asia, was published, providing a comprehensive detailed guide to the broad spectrum of SAR operations in SEA. ²³

The foregoing discussion has traced development of the most pertinent directives impacting the SAR command and control function within SEA. To establish a basis it was necessary to reach both outside the theater and back into earlier periods but, in some instances, knowledge of the early origins were not readily available. Evolution of the directives was traced through each command concerned. A time-line chart was developed to provide a basis for establishment of temporal interrelationships among them. (Ref Tab G.)

4. WERE THEY ADEQUATE?

The ARRS Programming Plan 574 was adequate insofar as it pertained to establishment of the JSARC and the RCC's as part of 3d ARRGp. No problems worthy of mention were noted in the use of this plan for this purpose.

Generally speaking, determination of adequacy of the other documents under discussion was limited to the latest available version of each document. The laborious detailed study of each series of documents as it evolved would serve no purpose and would constitute a redundant effort in that most of the

CHRONOLOGY OF SOME DEPARTMENT OF DEFENSE DIRECTIVES IMPACTING SAR IN SEA							
Calendar Year	Joint Service	USAF	PACOM	PACAF	SEA Joint Service	2d AD 7 AF	
1959 to 1962	AFR 55-7 JCS PUB 2	AFR 20-54	INST 3130.2A	INST 3130.1	PAFR 55-90		
1963			INST 3130.1B 10 June 63	PAFR 55-90 2 Oct 63 13 AF SUPP			
1964							
1965	AFR 55-7 13 Aug 65	AFR 23-19 2 Dec 65	AFM 2-36 1 Jun 65	INST 3130.1C 25 June 65		2dAD 55-20 14 Jan 65 2dAD 55-20A 1 Apr 65	
1966			Change 1 21 Nov 66	PAFR 55-90 20 May 66 15 Nov 66		2dAD 55-20 4 Mar 66	
1967	AFR 64-3 31 May 67	AFR 23-19 14 Mar 67	AFM 2-36 3 Jan 67	INST 3130.2B 25 Sep 67	PAFR 55-90A 16 Jun 67	PACAF SAR PLAN 120-67	7 AFR 64-2 5 Apr 67
1968						7 AFM 64-1 1 Mar 68	

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Tab G

changes in these documents were part of a self-cleansing process to rid the document of prevailing inadequacies.

The tri-service directive, AFR 64-3, AR 525-90, NWP SUPP 37(A), dated 31 May 1967 expanded the basic SAR command and control guidance in paragraph 40404, Unified Actions Armed Forces (UNAAF) (JCS Pub 2), describing the coordination and command relationships of the area commander as follows:²⁴

Has primary authority and responsibility for SAR within his area.

Will develop and publish supplemental wartime SAR procedures for his area of responsibility, taking into consideration geographic and climatic data, probable areas of operation, countries involved, SAR forces required, available intelligence data, etc.

May delegate SAR authority to subordinate commanders and, by mutual agreement, to Coast Guard or military commanders of other commands.

Will establish joint SAR centers whose functions will be direction and coordination of all SAR facilities within their areas of responsibility. Provisions will be made for all services concerned to actively participate in the joint SAR center. Each service will provide sufficient personnel to insure adequate manning of the component SAR controller position.

Will exercise control, through his component commanders, of SAR forces committed to an incident.

May assign SAR tasks and missions to forces not assigned but based or operating in his area. Control will normally remain with the commander advised of the availability of his assigned SAR assets. The area

commander may assume operational control of these assets for specific SAR missions.

This directive stated the policy that to operate in hostile areas, the peacetime SAR forces must be equipped and trained for the wartime mission. It further stated that to ensure effectiveness of the specified procedures, component commanders would train personnel in their use prior to the outbreak of hostilities. It did not state, however, that the equipping of the forces for the wartime mission must be done prior to the outbreak of hostilities. Although the impact of this omission was less destructive in the JSARC area than in the aircraft area, this lack must be identified as an inadequacy.²⁵

The above inadequacy was resolved for the Air Force by the ARRS mission statement in AFR 23-19, that ARRS would maintain combat personnel recovery forces for the rescue of military personnel from hostile areas in accordance with AFR 64-3.²⁶

The ARRS mission also included providing the air component of JSARC's operated by JCS designated area commanders; or alternatively, manning, equipping and operating the JSARC for the area commander, when so directed. Also included was the mission of providing and operating the SAR component in the AOC supporting contingency operations. There were no apparent inadequacies in AFR 23-19 as it related to the JSARC function.²⁷

AFM 2-36, the SAR doctrine manual, identified the recovery of military personnel from hostile areas as one of the primary spheres of operational activity into which SAR missions essentially grouped. It further addressed this sphere of activity as follows:²⁸

Recovery of military personnel from hostile areas is a responsibility of the unified commander or joint commander normally assigned to the air component commander. The air component commander discharges his responsibility through the SAR controller of the joint search and rescue center. To insure optimum utilization of Air Force SAR resources, a professional SAR/recovery advisor functions as a member of the air component commander's staff. The SAR staff member advises the commander of the capabilities limitations of available SAR forces and makes recommendations for their employment. SAR procedures used in the combat zone are an extension of peacetime procedures supported as necessary by tactical aircraft.

A weakness of this directive lies in the last sentence. It is less than an adequate description of SAR procedures used in the combat zone, even for the JSARC function.

CINCPACINST 3130.2B, Wartime Search and Rescue Procedures for U. S. Military Forces in the CINCPAC Area of Responsibility, provided as general guidance:²⁹

Wartime search and rescue procedures are basically an extension of existing peacetime SAR organization and procedures in friendly territory, with special provisions incorporated for employment in hostile areas.

The last phrase, although technically correct, was considered inadequate guidance in that it lacked the specifics necessary to convey a true understanding of the problem. Again, this weakness impacted the JSARC function with much less force than some other areas but was still perceptible and tended to give the reader a false sense of security.

The more detailed guidance provided the SAR commanders concerning the JSARC function was apparently adequate.

CINCPACINST 3130.1C concerning the broad scope of both civil and military SAR in the PACOM area impacted the JSARC function primarily by Change 1, 21 November 1966, which specified that the 7th AF Commander would be SAR Coordinator for SEA. This action sanctioned a relationship previously established by less direct means through 13th AF Supplement 1 to PACAFR 55-90.³⁰

PACAFR 55-90 implemented the PACOM directives, taking cognizance of USAF direction in the SAR function. It adequately accomplished its stated purpose of establishing SAR responsibilities and outlining the SAR operational organization within PACAF.³¹

PACAF SAR Plan 120-67 contained detailed instructions and procedures for the implementation of PACAFR 55-90. Insofar as it affected the JSARC function, it appeared to be adequate.³²

The joint Air Force, Navy, Army and Marine SAR directive for SEA was a succinct distillation of pertinent directives and policy from higher echelons oriented toward area operations and supplemented for local application. If there was an inadequacy in this directive, it was the lack of firmness with which it dealt with multiservice manning of the JSARC which, in concert with a similar weakness in other directives on this subject, effectively prevented the JSARC from becoming truly "joint" in the full sense of the word.³³

The 7th AF SAR manual was a comprehensive treatise of the entire subject of SAR in the theater, well and completely written. It apparently was adequate in all respects, except that it was needed two or three years earlier.³⁴

5. WERE THEY USED? They were all used insofar as they applied to the JSARC and RCC functions. However, one element which was consistently repetitious among them, at least in principle; that the JSARC would be manned by representatives of all services involved, was not fully carried out. Apparently there has been no Navy or Marine representation. The 3d ARRGp Historical Report for the period stated that on 15 October 1967 the first Joint Service Officer was assigned to the JSARC, a U.S. Army Lieutenant Colonel who joined the JSARC staff as the Army liaison officer.³⁵

6. WERE THEY VALID (WHETHER USED OR NOT)? They were all

generally valid. However, there still appeared to be some degree of lack of validity in the weakness with which the need for specialized wartime SAR equipment and training was pointed out. In some cases, direction was not provided for peacetime development and procurement of the necessary wartime specialized equipment and/or training the SAR forces in wartime SAR procedures during peacetime.

7. WERE THEY IN AGREEMENT WITH:

a. EVENTS? With some reservation as to timeliness, they all appeared to be in agreement with events. Also, in the developmental stages, some disagreement with events occurred in the area of operational control. This is discussed in item 8 below.

b. CONCEPTS AND DOCTRINE? As they apply to the JSARC function, the documents were consistent with the basic guidance in this area. JCS Pub 2, Unified Actions Armed Forces; except paragraph 40405b of the JCS directive which states:³⁶

When a Service participates in the operation of a joint SAR center, that Service will provide sufficient manning of the component SAR controller position.

c. EACH OTHER? Except as noted above and considering the time sequence of their development, the documents were in agreement with each

other to an acceptable degree.

d. INTER/INTRA SERVICE? Again, taking cognizance of the above comments, there appeared to be no inter/intra service disagreement in the documents.

8. HOW DID ORGANIZATIONAL, COMMAND CONTROL ARRANGEMENTS INHIBIT OR ENHANCE THE ACCOMPLISHMENT OF THE TASK? During 1965 and 1966, there was a problem in the area of operational control which was discussed in detail on pages 109 through 114 of Volume I of this series. This problem was internal to the command and control system. Therefore, it had slight inhibiting influence on the accomplishment of the task per se with the exception of the examples discussed in the above cited pages. Subsequent directives, as previously discussed in this section, clarified the points at issue and eliminated the problems.

9. ADDITIONAL CONSIDERATIONS: None.

10. SUMMARIZE LESSONS LEARNED:

a. All pertinent SAR directives, even though recognizing to varying degrees the specialized nature of wartime SAR procedures as compared to peacetime SAR procedures, do not specifically nor strongly point out the nature of these differences in sufficient detail to provide the guidance needed to ensure understanding. Neither do they direct that both wartime SAR

equipment development and procurement and training of personnel in wartime procedures be conducted during peacetime to ensure wartime preparedness.

b. The JSARC was not functioning as a truly "joint" center in that each Service concerned was not providing sufficient personnel to ensure adequate manning of the component SAR controller position as directed by JCS and the joint SAR directive AFR 64-3, AR 525-90, NWP Supp 37(A).

c. Although a nearly complete, comprehensive set of documents providing guidance in the SAR management area evolved during this period and were available toward the end of the period, they were sorely needed earlier.

11. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a through c, generally support, in the same alphabetical order, the lessons learned that have been listed above:

a. Concepts and doctrines must clearly and specifically provide for the manning, equipping and training during peacetime of adequate SAR control forces to permit timely establishment of fully functioning JSARC's and RCC's to control combat SAR operations.

b. Either the basic doctrine that each participating Service provide sufficient personnel to the JSARC to ensure adequate manning of the component

SAR controller position should be complied with or action should be taken to obtain relief from this JCS directive.

c. Comprehensive wartime SAR organizational and procedural documents should be developed insofar as practicable during peacetime with local application being promulgated as early as possible after onset of hostilities.

PLANS, CONCEPTS, AND DOCTRINE ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. ARRS Programming Plan 574, 15 Dec 1965.
2. AFR 64-3, AR 525-90, NWP SUPP 37 (A), Wartime Search and Rescue (SAR) Procedures, 31 May 1967.
3. AFM 2-36, 3 January 1967.
4. AFR 23-19, 14 March 1967.
5. CINCPAC Instruction 3130.2B, 2 Sept 1967.
6. PACAF Reg 55-90, 15 Nov 66; PACAF Reg 55-90A, 16 Jun 67.
7. PACAF Plan 127-67.
8. PACAF Reg 55-90/13 AF Supp 1.
9. 2 AD Reg 55-20.
10. 7 AFR 64-2/NAVFORV INST 3130.1/USARV REG 95-8/COMSEVENTHFLTINST 3130.2/THIRD MAF ORDER 003130.1, 5 April 1967.
11. 7 AFM 64-1.
12. ARRS Programming Plan 574, op. cit.
13. AFM 2-36, op. cit.
14. AFR 23-19, op. cit.
15. AFR 64-3, op. cit.
16. CINCPAC Instruction 3130.1C, 25 June 65 w/Chg 1, 21 Nov 1965.

(PLANS, CONCEPTS, AND DOCTRINE ANALYSIS Footnotes - continued)

17. CINCPACINSTR 3130.2B, op. cit.
18. PACAF Reg 55-90, 15 Nov 66; PACAF Reg 55-90A, 16 June 67, op. cit.
19. PACAF Plan 127-67, op. cit.
20. PACAF Reg 55-90/13 AF Supp 1, op. cit.
21. 2 AD Reg 55-20, op. cit.
22. 7 AFR 64-2, 5 Apr 67, op. cit.
23. 7 AFM 64-1, op. cit.
24. AFR 64-3, op. cit.
25. Ibid.
26. AFR 23-19, op. cit.
27. Ibid.
28. AFM 2-36, op. cit., p. 8.
29. CINCPAC Instruction 3130.2B, op. cit.
30. CINCPAC Instruction 3130.1C, op. cit.
31. PACAF Reg 55-90, 15 Nov 66; PACAF Reg 55-90A, 16 Jun 67, op. cit.
32. PACAF Plan 127-67, op. cit.
33. 7 AFR 64-2, 5 Apr 67, op. cit.
34. 7 AFM 64-1, op. cit.
35. 3ARRGp Historical Report, 1 Oct - 31 Dec 67.

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GLOSSARY

ACR - Aircrew Recovery
AD - Air Division
ADC - Air Defense Command
ADR - Air Division Regulation
ADVON - Advanced Echelon
AFCS - Air Force Communications Service
AFM - Air Force Manual
AFR - Air Force Regulation
AFS - Air Force Specialty
AFCS - Air Force Specialty Code
AMC - Airborne Mission Commander
AOC - Air Operations Center
AR - Army Regulation
ARRGp - Aerospace Rescue and Recovery Group
ARRS - Aerospace Rescue and Recovery Service
ARRSM - Aerospace Rescue and Recovery Service Manual
ARS - Air Rescue Service
ARSM - Air Rescue Service Manual
ARVN - Army, Republic of Vietnam
ASOC - Air Support Operations Center
ATCC - Air Tactical Control Center

(Glossary - continued)

AT&T - American Telephone and Telegraph

AU - Air University

BOQ - Bachelor Officer Quarters

CAP - Combat Air Patrol

CBPO - Consolidated Base Personnel Office

C&C - Command and Control

CHECO - Contemporary Historical Evaluation of Combat Operations

CINCPAC - Commander in Chief, Pacific

CINCPACAF - Commander in Chief, Pacific Air Forces

CINCPACFLT - Commander in Chief, Pacific Fleet

CINCPACINST - CINCPAC Instruction

COMMAAG-V - Commander, Military Assistance Advisory Group - Vietnam

COMNAVFORV - Commander of Naval Forces, Vietnam

COMSEVENTHFLTINST - Commander, Seventh Fleet Instruction

COMUSMACV - Commander, United States Military Advisory Command,
Vietnam

CONUS - Continental United States

CP - Command Post

CRP - Controlled Reporting Point

CTG - Carrier Task Group

DAR - Directorate of Aerospace Rescue

(Glossary - continued)

DASC - Division Air Support Center

DCS/M - Deputy Chief of Staff for Materiel

DCS/O - Deputy Chief of Staff for Operations

DET - Detachment

DO - Director of Operations

DOD - Department of Defense

DMZ - Demilitarized Zone

DUST OFF - Code name for medical evacuation Army helicopter

FAA - Federal Aviation Agency

FAC - Forward Air Controller

FCC - Federal Communications Commission

FIR - Flight Information Region

FM - Frequency Modulation

FSK - Fire Suppression Kit

GCI - Ground Controlled Intercept

HF - High Frequency

ICAO - International Civil Aviation Organization

JCS - Joint Chiefs of Staff

JOC - Joint Operations Center

JRCC - Joint Rescue Control Center

JSARC - Joint Search and Rescue Center

(Glossary - continued)

LBR - Local Base Rescue

MAAG - Military Assistance Advisory Group

MAAG-V - Military Assistance Advisory Group - Vietnam

MAC - Military Airlift Command

MACTHAI - Military Advisory Command - Thailand

MACV - Military Assistance Command, Vietnam

MAP - Military Aid Program

MATS - Military Air Transport Service

NAROC - North American Recovery Operations Center

NAVFORV INST - Navy Forces Vietnam Instruction

NCO - Non-commissioned Officer

NKP - Nakhon Phanom

NM - Nautical Miles

NVN - North Vietnam

NWP SUPP - Navy War Plan Supplement

OIC - Officer in Charge

OJT - On-the-Job Training

OPORD - Operations Order

OSC - On-scene Commander

PACAF - Pacific Air Forces

PACAFR - Pacific Air Force Regulation

(Glossary - continued)

PACOM - Pacific Command

PACROC - Pacific Recovery Operations Center

PARC - Pacific Air Rescue Center

PARRC - Pacific Aerospace Rescue and Recovery Center

PCS - Permanent Change of Station

PDS - Personnel Data System

PP - Programming Plan

PTT - Vietnamese civilian telephone system

PUB - Publication

RCA - Radio Corporation of America

RCC - Rescue Control Center

RESCAP - Rescue Combat Air Patrol

RLAF - Royal Laotian Air Force

ROC - Recovery Operations Center

ROCS - Recovery Operation Centers

ROD - Required Operational Date

SAC - Strategic Air Command

SAR - Search and Rescue

SARC - Search and Rescue Center

SARCC - Search and Rescue Control Center

SEA - Southeast Asia

(Glossary - continued)

SEI - Special Experience Identifier

S. O. - Special Order

SOP - Standing Operating Procedure

SSB - Single Sideband

SVN - South Vietnam

TAC - Tactical Air Command

TACC - Tactical Air Control Center

TACS - Tactical Air Control System

TAO - Tactical Air Operation

TDY - Temporary Duty

THIRD MAF - Third Marine Amphibious Force

TOC - Tactical Operations Center

TRAC - Transportable Radio Air/Ground Communications

TSN - Tan Son Nhut

TWX - Teletypewriter Exchange

UHF - Ultra High Frequency

UNAAF - Unified Actions Armed Forces

USAFMPC - USAF Military Personnel Center

USARV - U. S. Army Regulation Vietnam

USIS - United States Intelligence Service

USMC - United States Marine Corps

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(This page is Unclassified)

(Glossary - continued)

USOM - United States Overseas Mission

VC - Viet Cong

VHF - Very High Frequency

VNAF - Vietnamese Air Force

VNJGS - Vietnamese Joint General Staff

WG - Wartime Guidance

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1954 - 31 MARCH 1968

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1954 - 31 March 1968

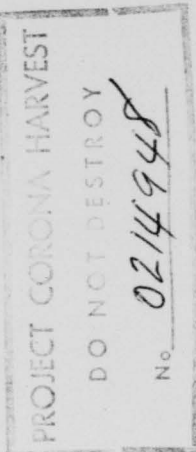
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20 May 1969

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INTRODUCTION

The statement by General O. P. Weyland that a "standing facet of the Korean War was the number of old lessons that had to be relearned", has certainly been supported in this volume, particularly with respect to operational concepts, tactics, and techniques. General Weyland's further statement that "It appears that these lessons either were forgotten or were never documented, or if they were documented, were never disseminated", has also been fully supported.

One ARRS helicopter squadron commander stationed in Vietnam fully supported both of the above quotations by General Weyland when he stated:

The greatest problem was in operational concepts. What was a mission, where did foolishness start and operational feasibility end? Who was responsible for the mission? How was the operation to proceed? The fact that all work had stopped on the aircrew recovery concept at the end of the Korean War would have been a mortal blow but for the fact that some personnel were still in the system to take the old concept and adopt it to the present conflict.

This certainly epitomized the situation that confronted ARRS when they introduced operational forces into SEA in June of 1964. The above quote also supported in full the statement by General Bruce K. Holloway that:

Not everything in Southeast Asia is an adaptation of old methods. We have developed new tactics and techniques that capitalize on advanced hardware and reflect the experience of many thousands of combat missions. It is essential that both, adaptations of old techniques and newly developed tactics and methods be thoroughly documented for the future.

The failure to document all aspects of the operation in Korea plagued Rescue forces well into the 1966-67 time period. Perhaps this might end up as one of the major lessons that will again be learned as a result of Vietnam.

This document has been prepared as a part of the overall Corona Harvest Study conducted by the Air University under the authority contained in AFR 55-15. Basic guidance is contained in "Project Corona Harvest Plan" dated 1 July 1967.

The total report, because of the diversity of mission responsibility, has been addressed in four separate volumes as follows:

Volume I - USAF Search and Rescue in Southeast Asia.

Volume II - Joint Search and Rescue Control Center (JSARC).

Volume III - Local Base Rescue (LBR) in Southeast Asia.

Volume IV - Aircrew Recovery (ACR) in Southeast Asia.

The structure of this volume, unlike that of Volume I, adheres to the format outlined in Corona Harvest Operating Instruction 1, dated 1 November 1968. Volume I was purposely designed to reflect the chronological ARRS force buildup in Southeast Asia and the problems that were encountered as mission responsibility increased. As a result, the full spectrum of ARRS operations in SEA was addressed, which in itself caused some redundancy in the remaining three volumes. To reduce this redundancy to a minimum, reference was made to Volume I in those instances where problems pertinent to the LBR missions had already been addressed in detail in Volume I.

As the functional areas of training, research and development, safety, etc., were common to all missions, they were fully addressed in Volume I, to again preclude repetition.

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LOCAL BASE RESCUE (LBR) IN SOUTHEAST ASIA

1954-1961

As the Local Base Rescue mission was not officially established in Southeast Asia (SEA) until June of 1964 no effort will be made to address the ~~Air University~~ ^{CORONA HARVEST} format for this time frame. It is, however, deemed important to provide a brief historical insight to the Air Rescue Service (ARS) LBR mission prior to its inception in SEA.

In 1960, Search and Rescue (SAR) in the United States was accomplished through the National Search and Rescue Plan and the LBR helicopter capability. The newly activated LBR function was parceled out to the individual commands with an assigned mission of rescuing personnel from a crashed aircraft within the immediate surroundings of the base of assignment. In 1960, the McKee Board findings led to studies and recommendations that all rescue functions be consolidated. This was accomplished during the 1960-61 time period when the LBR and National SAR functions were transferred to ARS.¹

Integration of 70 LBR units into Air Rescue Service was completed on 1 October 1961, resulting in a total of 148 helicopters being transferred to the Command. Included in this number were 17 H-43A's, 69 H-43B's, 58 H-19B's and 4 SH-21B's. The H-19's and SH-21's were to be phased out as rapidly as H-43 production permitted, providing a total LBR unit

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equipment (UE) force of 150 HH-43's.²

Although these LBR helicopters were very successful in their primary mission, they were not designed for search duty. They were short range/endurance helicopters and were not adequately equipped to home on crash/individual locator devices, and they were restricted from instrument flight. This frequently precluded their arriving on scene and often limited search under marginal weather conditions. Efforts to obtain a suitable overland search and recovery vehicle dated back to 1959 when helicopters were first phased out of ARS. The major stumbling block to attaining this objective was the widespread and consistent misunderstanding of helicopter roles, capabilities and LBR organizational and functional requirements. Whenever ARS requested a vehicle with an extended range and search capability, the normal reaction was to refer to the 150 helicopters in the ARS inventory and ask, "Why can't you use them?" There were of course several reasons, i.e., lack of range, speed, communication gear, lift capability, instrument capability and just plain not suitable for the wartime mission. It should be reiterated that the life saving, fire suppression, LBR function that the H-43 was designed to accomplish, it did -- and extremely well.³

ARS did not have a wartime mission during this time period. If they had, it would have been to deny the enemy possession of our downed

aircrews and to return these invaluable assets to U. S. control by recovering them in the battle zone and from within hostile territory. Air Rescue Service had very little capability to perform such a mission. The most capable LBR equipped HH-43's would be marginal for the combat role and then only after⁴ modification.

The HH-43, with its already identified limited capability to perform extended or combat recovery, would subsequently become the primary vehicle for support of Search and Recovery in SEA during the initial force buildup.

VOLUME III

LBR IN SOUTHEAST ASIA (1954-1961)

FOOTNOTES

1. Briefing, Hq ARS Briefing to Hq MATS, Subj: ARS Background, Capabilities and Requirements, 31 January 1964, pp. 2-3.
2. Ltr, Comdr ARS to Comdr MATS, Subj: Command Monthly Letter, 31 October 1961, p. 1.
3. Briefing, Hq ARS Briefing to Hq MATS, op. cit., pp. 6, 13.
4. Ibid., p. 14.

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TASK ANALYSIS

1962-1964

1. LIST AND DESCRIBE EACH ASSIGNED TASK:

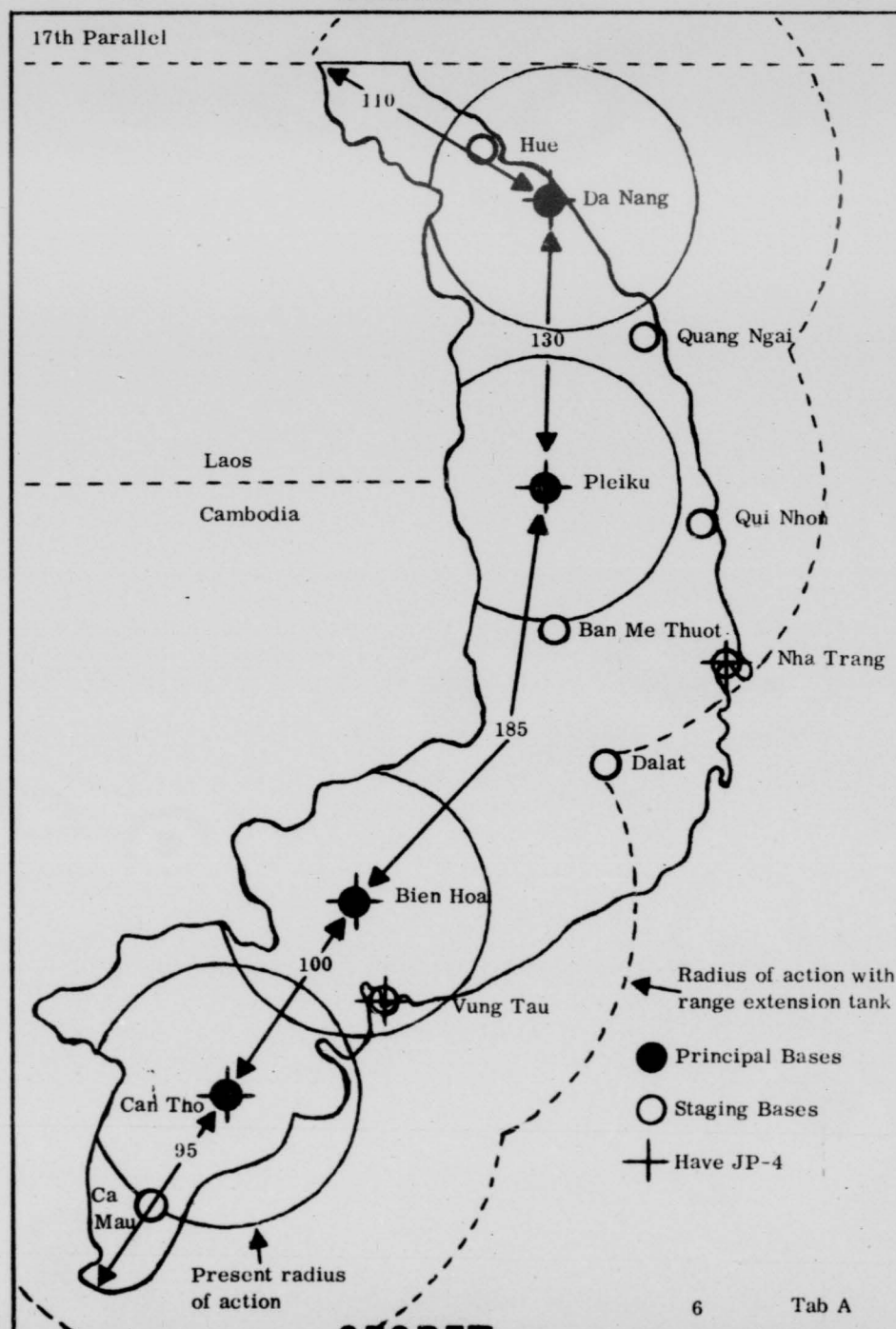
AIRCREW RECOVERY (ACR): LBR units were tasked to provide a capability for prompt recovery of downed aircrew personnel involved in aircraft accidents, incidents, or similar occurrences within operating limits of the helicopter.¹

A professional ACR capability was required for the following reasons: a high combat sortie rate, high density traffic, extensive intra-theater airlift of personnel, adverse weather conditions and the resulting number of SAR missions experienced.² Initial planning by Hq ARS indicated that the ACR task in the Republic of Vietnam (RVN) could be accomplished by positioning helicopter detachments at Bien Hoa, Can Tho, Da Nang and Pleiku. The HH-43B had a radius of action of 61 nautical miles and could not provide complete in-country coverage. (Ref Tab A.) To increase the radius of action required auxiliary fuel tanks, which were not available. A requirement existed for external drop tanks; however, pending development of such tanks, an interim 150 gallon tank in the cabin was acceptable. This additional fuel would more than double the range of the HH-43B and provide greater flexibility of operation. (Ref Tab A.)³

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A less desirable method of range extension could be accomplished by staging the helicopters out of numerous bases throughout the RVN. (Ref Tab A.) This assuming that JP-4 fuel was made available at all staging bases. This method of operation would result in excessive reaction time and increased exposure of helicopters to ground fire. It would also pose many problems associated with maintaining adequate uncontaminated fuel supplies.⁴

The proposed beddown of LBR forces in the RVN had to be realigned due to the urgent requirement to provide SAR support for YANKEE TEAM operations in Laos.⁵ As a result helicopter detachments were located at Bien Hoa and Da Nang in the RVN and Nakhon Phanom (NKP), Takhli and Korat Air Bases in Thailand. Detachments were comprised of three aircraft and crews with support personnel at all locations except Korat and Takhli which were two helicopter units. The NKP detachment had a primary mission of ACR, as did the detachments at Bien Hoa and Da Nang.⁶

For their primary mission the HH-43B combat aircrew rescue/recovery forces in the RVN were to be directed and coordinated by the Joint Search and Rescue Center (JSARC) and responsive to 2d Air Division (2d AD) operational control.⁷ Upon notification of an ACR requirement a mission would be scrambled by the control tower or the JSARC and the

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helicopters would proceed in pairs toward the target via a route coordinated to avoid artillery fire. Armed escort would be arranged through the Corps Direct Air Support Center (DASC) or directly with Army units, and the rescue helicopters would rendezvous with the gun ships en route. If radio or visual contact was made with the target, the low helicopter would proceed into the area protected by gun ships on each side. During the pick up, the gun ships would orbit the area and neutralize any hostile fire. The high helicopter would orbit at about 3,500 feet out of range of small arms fire and ready to assume the recovery role in the event the low helicopter was hit or experienced mechanical difficulty.⁸

The out-country ACR task was similar to that of South Vietnam with respect to methods employed and composition of the Search and Recovery Task Force (SARTF). However, the problems encountered in ACR in North Vietnam (NVN) and Laos differed in many respects. The absence of friendly forces, MIG threat and safe-haven areas such as Special Forces camps increased the difficulty of out-country ACR.⁹

AIRBORNE FIRE SUPPRESSION: LBR detachments were tasked to provide an airborne fire suppression capability for utilization within close proximity of the assigned base of operation. Forces utilized in support of this task would be directed by the LBR detachment commander in accordance with procedures established by coordination with the JSARC but under

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operational control of the local base commander.¹⁰

The capability of the HH-43B to suppress aircraft fires would be utilized whenever friendly aircraft crashed on or in the immediate vicinity of the assigned air base. Helicopters would respond in pairs, even though the distance was short. One HH-43B would be configured with the Fire Suppression Kit (FSK) with the other providing backup but configured for ACR.¹¹

BATTLEFIELD MEDICAL EVACUATION: LBR detachments were tasked to provide battlefield medical evacuation in support of the Vietnam Air Force (VNAF) and U. S. Army medical evacuation requirements. Medical evacuation was not normally a mission of search and rescue forces, however, the deplorable situation that existed during this time period dictated that USAF SAR forces play a significant role in the accomplishment of this task. VNAF helicopters were charged with this mission; however, throughout 1964, U. S. Army and Air Force officers reported that the two VNAF squadrons were not providing adequate med-evac service. Nearly every after-action report from the IV Corps area made some critical comment of VNAF performance. Either the helicopters were late or did not arrive; when they did, they sometimes departed without carrying away the wounded. There were 189 med-evac requests from IV Corps area during August, September and October 1964 of which only 38 were honored. The number

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of requests would have been higher had it not been for the support of Army UH-1B's.¹²

2. FOR EACH TASK:

a. HOW DOES TASK RELATE TO CURRENT CONCEPTS? To completely relate the task of ACR as pertains to the LBR mission and the concepts that existed during the 1962-1964 period, an analysis must be made of the peacetime policy statements that resulted in the development of wartime concepts.

The opening policy statement in the Tri-service Wartime Search and Rescue (SAR) Procedures directive (AFR 55-7), "Wartime SAR procedures are essentially an extension of the peacetime procedures described in the National Search and Rescue Manual," was contrary to the actual experience gained. In actuality, wartime SAR has very little in common with peacetime procedures. This policy statement as published has led to the completely erroneous belief that SAR forces equipped for peacetime operations can survive in a combat environment. Experience in SEA has proven otherwise.¹³

The objective of SAR as described in the National Search and Rescue Manual, that is, to aid and recover personnel in distress, is the same in wartime as in peacetime.¹⁴

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However, the policy statements, concepts, tactics and techniques covering wartime SAR and specifically the ACR task, cannot address the peacetime and wartime SAR missions with the same general terminology.

AFR 64-3 still states that "Wartime SAR in friendly territory is basically an extension of peacetime SAR operations" and that "SAR procedures and techniques for use in friendly territory also apply to hostile territory." ¹⁵ This then is the fallacious thinking that resulted in peacetime equipment, peacetime concepts and peacetime tactics and techniques being employed to prosecute the wartime ACR mission in 1964. It perhaps had some bearing on the delay in deploying professional SAR forces to SEA, and in lieu of, utilizing random forces, ill equipped and ill trained to perform the ACR mission in a combat environment.

b. WHAT WAS PURPOSE (NATIONAL/MILITARY OBJECTIVE) OF DOING TASK? In May 1964, when the coalition government of Laos fell apart, the U.S. Government, anxious to bolster Neutralist forces and to demonstrate U.S. interest and determination in Laos, convinced Souvanna Phouma that aerial reconnaissance would prove to the world that the Pathet Lao was receiving help from China and North Vietnam. Thus the YANKEE TEAM flights began on 18 May 1964. ¹⁶

The U.S. commitment also created the need for search and rescue

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capability in Laos. Air America, a private airline which supported covert activities in Laos, had provided limited SAR support for Royal Laotian Air Force (RLAF) T-28's and could be pressed into service in the event a YANKEE TEAM plane went down. The 2d AD felt that Air America forces would be inadequate. Additionally, an Air America representative indicated that they were not staffed or equipped to provide round-the-clock, all weather SAR capability.¹⁷

Since Air America was supposedly a private company, their involvement in SAR support operations could have possibly led to an embarrassing incident for the U.S. Government.¹⁸

The employment of the Air Rescue Service ACR/LBR detachments provided recovery support for tactical aircrews engaged in direct support of the National objectives. The detachment at Nakhon Phanom provided SAR support coverage for YANKEE TEAM mission and support aircraft operating over Laos.¹⁹

The U.S. efforts to counter Communist insurgency in South Vietnam (SVN) had proven very difficult. United States training of Vietnamese crew members often involved combat missions -- with the USAF airman in an instructional role.²⁰ The increased air activity resulted in establishment of ACR/LBR detachments at Bien Hoa and Da Nang to provide SAR support for

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the combined U.S./Vietnamese counterinsurgency efforts.²¹

Although the USAF rescue capability had greatly increased by December 1964, Air America remained the backbone of the humanitarian operation during the first year. Between June 1964 and June 1965, Air America made 21 successful recoveries while, for the same period, USAF²² helicopters recovered 5 personnel.

The military objectives of the task to effect rapid recovery of downed combat aircrews stemmed from USAF policy and objectives stated in AFR 55-7, "Wartime Search and Rescue (SAR)." They were:²³

- (1) The recovery of personnel.
- (2) To deny the enemy a source of intelligence information.
- (3) To contribute to morale of combat forces.

c. WAS ASSIGNMENT OF THIS TASK TIMELY? The 240 air crashes that occurred in South Vietnam between January 1962 and June 1964 certainly identified the requirement for a professional SAR force long before their arrival in SEA. During this period most successful recoveries were made by ground troops or fixed or rotary wing aircraft in the immediate area of the crash. Although only two of the 240 air crashes were never located, the arrangement of using opportune forces for SAR left much to be desired. The commitment of large numbers of troops to SAR efforts in insecure

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territory certainly was questionable, particularly where there was little chance of recovering the crew alive. Excessive delays encountered in obtaining Army, Republic of Vietnam (ARVN) support were not acceptable from a life saving standpoint and also gave the enemy a chance to infiltrate the area.²⁴

As of 1 July 1964, there had been 143 fatalities resulting from crashes of U.S. aircraft in Vietnam. The Air Force had been criticized for not providing a professional SAR capability other than a control element. The first commander of this control element stationed at Tan Son Nhut recommended in the summer of 1962 that ARS personnel and equipment be deployed to Southeast Asia. In the following year several other requests were made. The Deputy Director of the Air Operations Center (AOC) summed up the situation in August 1963 when he wrote, "The need for professional SAR forces in this area has been recognized for a long time and has been made a matter of record to 2d AD and the Pacific Air Rescue Center (PARC) on many occasions in the past."²⁵

Headquarters Pacific Air Force (PACAF) identified an urgent requirement for an aircrew recovery vehicle in October 1963. This was supported by Headquarters ARS and a letter forwarded to Military Air Transport Service (MATS) Headquarters stating that USAF wartime SAR policy and objectives were not being achieved in Vietnam because the required resources were not available within Air Rescue Service to do the job. By utter default then,

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USAF combat aircrews were made dependent upon (ill-equipped and ill-trained for the task) U. S. Army and Marine Corps helicopter resources diverted to accomplish the ARS mission.²⁶

One of the ARS officers assigned to SEA in 1962 summed up the early efforts that were made to obtain dedicated SAR forces:²⁷

We encountered great difficulty in acquiring rescue helicopters for Vietnam. Actually it took months of work at PARC. We finally got the HH-43F which was really too little and too late. It took a long time to convince Air Force that we should have HH-3 helicopters; namely, we needed the range and lift capability of these aircraft. This has become our ACR force. I reiterate, we must maintain this ACR during peacetime. Another problem we encountered was breaking loose LBR rescue units from CONUS to support the war in Vietnam. CONUS LBR units should be identified to move with the tactical forces deploying overseas. It seems to me that it is more important to provide LBR rescue to those tactical forces operating in a wartime environment than to continue support in the CONUS, if we have to make a choice between the two.

d. WHAT WERE THE CONSTRAINTS? Strict manpower ceilings in SEA affected the SAR force employment. The U. S. involvement under the JUNGLE JIM and FARMGATE programs was semi-covert and SAR forces would emphasize U. S. participation. In this connection, in order to keep the operation covert, very strict ceilings had been placed on manpower.²⁸

In November 1963 Commander, 2d AD, identified the minimum SAR force required to support the counterinsurgency effort in the RVN. These

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forces were to be located at four strategically located airfields within RVN.²⁹ Also, a study by Hq ARS in January 1964 indicated that four locations with 176 personnel would be required to provide adequate HH-43 SAR coverage for SVN.³⁰ Approval was received from USAF for introduction of SAR forces into South Vietnam in March 1964 with a target date of June 1964.³¹

By April, however, the issue had not been resolved between Commander in Chief, Pacific (CINCPAC) and Military Assistance Command Vietnam (MACV).³² Commander, United States Military Assistance Command Vietnam (COMUSMACV) indorsed the SAR requirement for RVN; however, he requested only two units with an increase of 86 personnel to the 2d AD ceiling.³³

Justification of increase in SEA manpower requirements and conversions of manpower slots between Thailand and RVN, to provide the desired force location, was a continuing effort.³⁴

The majority of the military constraints stemmed from the necessity of using equipment which was designed for peacetime, non-hostile operations. Before the SAR force was introduced into the SEA milieu it was recognized that the equipment would impose unacceptable constraints.³⁵

e. WHAT WERE THE EXPECTED RESULTS? Headquarters ARS conducted a study in late 1963 and early 1964 on the feasibility of employing ARS HH-43B helicopters in support of the rescue/recovery mission in the

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Republic of Vietnam. A letter from the ARS Commander to MATS, dated 17 January 1964, outlined the results of this study and requested certain actions be taken. The SEA SAR requirement was definitely established as a responsibility of the USAF under AFR 55-7, "Wartime Search and Rescue," and ARS considered it a mission of first priority. Although HH-3C helicopters were required to accomplish the total mission and had been urgently requested by PACAF, ARS action with present equipment was needed immediately.³⁶

Headquarters ARS informed MATS that the immediate requirement for professional rescue forces in the RVN to support the combat situation could be satisfied with the employment of an interim helicopter until HH-3C helicopters were available. The HH-43B was the most adaptable helicopter in the ARS inventory and with modifications it would be capable of fulfilling the urgent SEA requirement.³⁷

PACAF and PARC did not agree with modifying the HH-43B for use as a combat aircrew recovery vehicle unless there was no alternative. They felt that any money available could be applied against procurement of a more desirable and capable aircraft.³⁸ PACAF believed the deployment of six modified CH-3 helicopters with their greater range and speed, would provide adequate coverage for the long term, and that the modified HH-43 would be a minimum acceptable interim vehicle.³⁹

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f. WHAT WERE THE ACTUAL RESULTS? The effectiveness of ARS SAR operations in SEA for the 1962-64 time frame was difficult to document. At the time of the initial deployment of helicopter units in June 1964, and for at least 3 months thereafter, accurate reports of mission activity, aircraft status and flying hours were for the most part nonexistent. Aircraft were deployed to provisional units; and since aircraft could not be assigned to provisional units, responsibility for reporting aircraft status and flying hours remained with the home unit. In addition, at the time of the initial deployment, there was no adequate combat mission report format in existence; and for that matter, an adequate one had not been developed as of the end of the period for which this report is rendered.⁴⁰

The PARC Commander felt that the equipment was not adequate to do the job and stated: "I share the headquarters' concern about the continued use of unmodified helicopters and the attendant high risk potential, however, since we are a military fighting force . . . I feel we must do the best we can with what we have until some relief is available."⁴¹

After a visit to SEA in November 1964, the PARC Commander reported considerable mission activity for the combat modified HH-43F's and indicated increased activity for the future. He felt that the HH-43F was an adequate vehicle to perform the ACR mission on an interim basis but could not be considered ideal due to numerous serious performance deficiencies. Although

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auxiliary tanks had been installed for extended range, the helicopter still could not be utilized "across the board" for all ACR missions in SEA. The "F" model range performance was adequate for most operations in RVN, but the PARC Commander was concerned with the assigned ACR mission in the event that it went beyond the RVN border.⁴²

The Vice Commander in Chief, PACAF supported this position stating in December 1964:⁴³

. . . . The HH-43B and F model helicopters assigned are only marginally suitable for the ACR mission and should be replaced without delay. . . . The ACR capability should provide quick reaction coverage for all of the RVN land and coastal areas and should extend as far as possible into Laos and North Vietnam to support reconnaissance missions and known contingency plans.

Despite the fact that the equipment was not designed for the combat mission, during this initial period (June-December 1964) there was no indication that the LBR detachments failed to accomplish the mission objectives. On 1 November 1964 the HH-43F's assumed alert at Bien Hoa. In the first month of operation two Air Rescue pilots received the VNAF Distinguished Flying Cross (DFC) with Gold Star (Vietnam's 2nd highest award) for a night mission flown in support of a Vietnamese retaliation attack on "D" zone. On 1 December 1964 the first ARS save was made in "D" zone. The Base Commander at Bien Hoa said they were probably the first white men to set foot in "D" zone in 10 years. On 16 December 1964 a

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wounded Special Forces soldier was rescued near the Cambodian border using 150 feet of hoist cable. Up to this time no other helicopter had over 110 feet of cable, so this became a Rescue first.⁴⁴

The Korat detachment flew 334 missions from 15 Aug 64 to 14 Jan 65. During this same period the Not Operationally Ready - Maintenance (NORM) rate was 5.9%; the Not Operationally Ready Supply, Grounded (NORS-G) rate equalled 12.6%; while the Operationally Ready (OR) rate was 81.5%. The unit maintained a mission ready rate of 99.98%. Of 3,588 hours of operation at least one helicopter was in commission 3,560 hours.⁴⁵

Since operational concepts and procedures for the LBR mission in SEA were not unlike those in other areas, no difficulties were encountered in this facet of operation. When it came to the ACR operations, each mission generally presented its problems as to force requirements and the tactics and techniques of force employment. Since operations such as that experienced were unprecedented, the initial efforts were played by ear.⁴⁶

The original HH-43B ACR concept used Nakhon Phanom as a primary recovery base prior to using Udorn. Escort was accomplished using Air America T-28's and fighters as they were made available. As stated by the Detachment 3 Commander (25 June 1964 - 23 September 1964):⁴⁷

. . . . The largest problem encountered was the fact that rescue at the time was not in the true aircrew recovery business and every effort was made to record and document our actions and provide subsequent

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commanders with the knowledge that we had gained from our limited aircrew recovery experience. . . .

Actions and procedures established during my command were based upon memory of Korea activity. . . .

As stated by the Commander of the ARS detachment at Korat

⁴⁸
(June-December 1964):

. . . . At first, rescue forces were sent into SEA without any higher headquarters support. There were no clear, definite lines drawn on what rescue forces an on-scene commander could use when an emergency was encountered. We had to operate at the local level almost all of the time. . . .

g. WHAT WERE THE ALTERNATIVES RELATIVE TO THE ALLOCATION AND/OR EXECUTION OF THE TASK? The initial SAR missions were controlled by JSARC controller personnel using opportune aircraft and ground forces. This method of operation proved to be completely unacceptable as air activity and the requirement for SAR missions increased. Not only did this type of operation necessitate excessive exposure of rescue forces to enemy action, it on occasion created disaster. This was vividly illustrated during a SAR mission conducted on 8 October 1963. Two Marine H-34's, involved in a SAR effort for a crashed T-28, crashed and killed all 12 personnel on board.⁴⁹ Although the cause of the crash of these H-34's was attributed to enemy ground fire, it was reasonable to assume that had professional SAR forces been available, this unnecessary loss of life might

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have been avoided.

From March 1962, until professional LBR/ACR forces were introduced in June 1964, the SAR mission could have been more effectively accomplished had a dedicated SAR force been made available from existing resources and mission direction provided by the JSARC.⁵⁰

AIRBORNE FIRE SUPPRESSION/BATTLEFIELD MEDICAL EVACU-

ATION: Regardless of the primary mission assigned to an LBR detachment in SEA, i. e., LBR or ACR, each detachment was capable of prosecuting ACR, airborne fire suppression or medical evacuation missions. For this reason it is extremely difficult to address these tasks as separate entities because they are so interrelated with respect to organization and mission responsibility. To address fire suppression and med-evac in the ^{CORONA HARVEST} Air University (AU) format, as has been done with the ACR task, would result in almost 100% redundancy.

3. ADDITIONAL CONSIDERATIONS: None.

4. SUMMARIZE LESSONS LEARNED:

- a. SAR forces equipped for peacetime operations could not survive in a combat environment while performing the ACR mission.

Air Force policy since 1958 had bred a SAR force ill prepared for combat operations. The ARS reorganization directive

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published by HQ USAF, 26 September 1958 stated:⁵¹

ARS will be organized, manned, equipped, trained and deployed to support peacetime air operations.

No special units or specially designed aircraft will be provided for the sole purpose of wartime search and rescue (SAR).

Wartime rescue operations will be dictated by the capabilities of equipment used for peacetime SAR, and will be conducted in accordance with JAAF and JCS Standard Wartime SAR procedures.

The current AFR 64-3, Wartime Search and Rescue (SAR) Procedures reflects essentially the same policy and vaguely addresses wartime SAR.

The above policy left Air Rescue Service prepared only in spirit to conduct a wartime mission.

- b. Effective ACR required well trained, dedicated, professional SAR forces.

The initial SAR efforts, using opportune forces on a catch-as-catch-can basis, were inadequate. These forces were required to divert from their primary mission, their equipment was not configured for an ACR role and frequently their communications gear was not compatible with that of the distressed persons or the controlling SAR agency. For an around-the-clock, all-weather SAR capability, the JSARC must have ready SAR forces at its disposal.

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5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a and b, generally support, in the same alphabetical order, the lessons learned that have been listed above:

- a. That SAR forces be equipped and maintained during peacetime for world-wide operation in a wartime environment.

The AFR 64-3 statement that the SAR objective is the same in wartime as in peacetime is followed by the broad policy statement, "However, to operate in hostile areas, the peacetime SAR forces must be equipped and trained for the wartime mission."⁵²

This is very true, but came too late. The Air Force should expand this statement, giving more positive and direct guidance to prevent future deterioration of the SAR force in peacetime. Nothing has been done in the past to maintain a SAR force capable of meeting world-wide wartime contingencies with equipment compatible with the tactical weapons systems employed.

Serious consideration should be given to organizing SAR units into cellular structures, composed of specified numbers and

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types of personnel and equipment. SAR units worldwide would then be tasked to deploy a designated number of SAR cells, to predetermined geographical areas, in conjunction with tactical forces. Air Force contingency and operations plans would address the deployment of SAR forces and tactical forces in the same manner and detail.

Development of SAR equipment must keep pace with advances in the tactical weapons systems and designed to operate in the same environment.

A nucleus of wartime SAR concepts, techniques and procedures must be formulated from SEA operations. SAR personnel must be thoroughly trained in each of the above areas, and continued emphasis must be placed on evaluating new and improving old doctrine. More effective training and more progressive SAR development programs could be realized by SAR cells participating in peacetime exercises with tactical forces.

b. That USAF recognize the continued requirements for wartime SAR, and establish a peacetime SAR force structured to react to wartime contingencies. Such a force would eliminate confusion during the early stages of a conflict and prevent excessive time lags in establishing an effective ACR capability.

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TASK ANALYSIS

1962-1964

FOOTNOTES

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2. Ibid., p. 1.
3. Ibid., Tab B, p. 1.
4. Ibid., Tab B, pp. 1-2.
5. Project CHECO Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-66) Continuing Report, 24 October 1966, p. 18.
6. Ltr, Col Edward Krafka to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, 24 Oct 1968, p. 1.
7. Ltr, Hq ARS (ARCCO) to MATS, 17 Jan 64, op. cit., Tab A.
8. CHECO, USAF Search and Rescue in Southeast Asia (1961-66), op. cit., p. 68.
9. Ibid., p. 67.
10. Ltr, Hq ARS (ARCCO) to MATS, 17 Jan 64, op. cit., Tab A.
11. Ibid., Tab C, p. 2.
12. CHECO, USAF Search and Rescue in Southeast Asia (1961-66), op. cit., p. 10.
13. Msg, CINCPACAF, DO 31334 Mar 66 to 2d AD, Subj: Review of AFR 55-7.
14. Air Force Regulation 64-3, 31 May 1967, p. 2.

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(TASK ANALYSIS Footnotes - continued)

15. Ibid., pp. 4-5
16. CHECO, USAF Search and Rescue in Southeast Asia (1961-66)
op. cit., p. 30.
17. Ibid., pp. 30, 34.
18. Ibid., p. 36.
19. Ibid., p. 34.
20. Project CHECO Southeast Asia Report, Evolution of the Rules of
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30 September 1966, p. 20.
21. Second Air Division SAR Requirements Study, Republic of Vietnam,
1 Sept 1963, pp. 6-7.

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pp. 20, 35.
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24. CHECO, USAF Search and Rescue in Southeast Asia (1961-66), op. cit.,
pp. 2-7.
25. Ibid., p. 14.
26. Ltr, Comdr ARS to Comdr MATS, 18 Nov 1963, op. cit., p. 1.
27. Ltr, Lt Col Albert R. McNamee to Lt Col Gordon W. Crozier, Subj:
Corona Harvest Study, 6 Nov 1968.
28. CHECO, USAF Search and Rescue in Southeast Asia (1961-66), op. cit.,
p. 16.

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(TASK ANALYSIS Footnotes - continued)

29. Second Air Division SAR Requirements Study, Republic of Viet Nam, op. cit., pp. 6-7.
30. Ltr, Hq ARS (ARCCO) to MATS, 17 Jan 1964, op. cit., pp. 1-2 and Tab F - pp. 2-3.
31. ARS Programming Plan 563, April 1964, p. 2.
32. CHECO, USAF Search and Rescue in Southeast Asia (1961-66), op. cit., p. 16.
33. Msg, Hq ARS (AROOR) 132-E, 6 May 1964.
34. Ltr, Hq PACAF (DO) to CINCPAC, Subj: Increase and Realignment of Air Rescue Service Local Base Rescue and Aircrew Recovery Forces in SEA, 29 Nov 1965, pp. 1-2.

Ltr, Hq MAC (MAXMOPR) to ARRS, Subj: SEA Military Personnel Ceilings (MAXMOPR Letter, 30 Mar 1967) w/2 Attachments, 5 June 1967, Attachments 1 & 2.
35. Ltr, Hq ARS (ARCCO) to MATS, 17 Jan 1964, op. cit., pp. 2-3.
36. Ibid., p. 1.
37. Ibid., p. 4.
38. Ltr, Comdr PARC to Comdr ARS, 23 Mar 1964, p. 1.
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40. Ltr, Hq ARRS (ARBDP/Mr. Nee), Subj: Corona Harvest - Reporting Problems, 15 Nov 1968, p. 1.
41. Ltr, Comdr PARC to Comdr ARS, 30 July 1964, p. 2.
42. Ltr, Comdr PARC to Comdr ARS, 10 Nov 1964, p. 2.
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47. Ltr, Hq MAC (MAOCX/Col Mask/3388) to Hq ARRS (ARXDC), Subj:
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50. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona
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HARDWARE ANALYSIS

1962-1964

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WHAT WAS USED?

The HH-43's were the only ARS helicopters utilized during this time frame, with the exception of the H-19 which was deployed to Thailand in 1962 for a short TDY period in support of YANKEE TEAM operations.

The HH-43B was initially deployed to Nakhon Phanom, Thailand to provide the ACR capability for reconnaissance and tactical missions in the southern panhandle of Laos and for extension into the Plaines des Jarres area. They provided the only immediate aircrew recovery capability in the event of an emergency SAR mission in this area and would also support fire suppression and med-evac requirements. The HH-43F's were utilized at Bien Hoa and Da Nang because of the combat environment and the specialized configuration of this model. They likewise provided fire suppression and med-evac support as required.¹

a. WHY WAS IT SELECTED? The HH-43B was not selected as the vehicle required to satisfy the initial Southeast Asia LBR and ACR requirements, there was just no other option available. Although this helicopter was designed and procured specifically for the Local Base Rescue mission, it was

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not envisioned that it be used for the combat recovery role. It was widely recognized that the HH-43B did not possess the growth potential required to effectively accomplish the SEA ACR mission. It was limited in range, restricted to daylight VFR operations, was single engine with a top speed of 90 knots and had no provisions for crew or aircraft protective armor. The HH-43F although specially configured for the aircrew recovery role in SEA, was just slightly better than the B model and at best could only be classed as a minimum acceptable interim vehicle.²

As stated previously PACAF supported by ARS did not concur with this rather expensive modification of the HH-43B unless there was no alternative.³ To thoroughly understand how ARS was propelled into a combat environment with equipment that they and others agreed could not effectively prosecute the combat mission, one must take into account rationale, budgeting, planning, priorities, etc., dating back to Korea.

The combat aircrew recovery resources of ARS were reduced after termination of the Korean Conflict and the combat crew recovery mission was eliminated. The few remaining helicopters left in the ARS inventory were dispersed to all parts of the world to provide a peacetime rescue capability. The only combat ACR capability that existed was one group of long-range C-47's for deep penetration recoveries of SAC crews from behind-the-lines. Even this capability was eliminated in 1958. By September of 1961 all

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recovery helicopters had been retired and ARS was equipped with only 58 fixed-wing aircraft. Rescue Service efforts were directed toward peacetime tasks with little or no thought or planning devoted to the specifics of the combat mission, i.e., equipment, tactics and techniques, etc. In planning it was envisioned that contingency tasks would be accomplished by an extension of the peacetime effort with the same equipment used for both. This gradual erosion of the combat ACR mission can be held accountable, at least in part, for the fallacious belief that "Wartime SAR procedures were essentially an extension of the peacetime procedures." This unrealistic policy statement in turn was largely responsible for the lack of adequate SAR equipment available to prosecute the Combat ACR mission. In a briefing to the Chief of Staff Air Force on 28 October 1965, the MATS Commander stated:⁴

The Air Rescue Service was called on to provide a combat aircrew recovery capability in Southeast Asia in May 1964. However, the first published recognition of a wartime role was not contained in any document until it appeared in the USAF Wartime Guidance in March 1965. Since this publication receives limited distribution, the authority for support that Rescue needs to develop a combat capability is not widely recognized.

b. WAS IT DESIGNED FOR THIS TYPE OF TASK? The HH-43B was designed and procured for the LBR function at air bases where the accident/incident potential was high by virtue of the type aircraft assigned and/or nature of air operations performed. This helicopter had a recovery capability and was assigned an area of responsibility within a 75 nautical mile (NM)

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radius of its operating base. The LBR function was not limited to established operational bases. It was planned that the HH-43B be deployed to perform a like function in support of contingency operations at other than established LBR locations.⁵

A Qualitative Operational Requirement (QOR) dated 21 February 1963 identified the HH-43B operating range as deficient in respect to the LBR requirements at many established air bases around the world and in all probability would be deficient at bases planned for contingency operations. Accidents/incidents which occurred more than 75 NM from a base could not be resolved by the HH-43B without range extension. In some cases, the range was extended by refueling enroute from fuel drums carried in the helicopter or from a source positioned for that specific mission. These makeshift range extension procedures were hazardous, also time consuming and not in consonance with the inherent urgency of the rescue/recovery mission.⁶

It can be supported with documentation generated during this time period that the HH-43B was designed to accomplish the LBR/fire suppression task in a peacetime environment but was not designed to accomplish the LBR or ACR task in a combat milieu.⁷

c. WAS IT USED PROPERLY? Lack of adequate documentation,

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frequent relocation and/or redesignation of LBR units, coupled with numerous changes in unit mission responsibility, has made it difficult to pinpoint whether a detachment had a primary mission of LBR or ACR during this early time period. For these reasons all HH-43B and F detachments were reflected as primarily ACR mission oriented from their inception in SEA through September 1965. (Ref Tab B.)

As there were no official ARS records maintained on the number of personnel recovered prior to 1965, it would be difficult to assess the effectiveness of the HH-43 for this time period. With the initiation of hostilities in Southeast Asia, the Air Force was not prepared to effectively accomplish the combat rescue mission. Recovery tactics had to be developed as the war progressed, since no recorded operational doctrine or combat recovery manuals were available. Progress was made in this direction and the outdated equipment was used to the best of Rescue's ability.⁸

Statistics compiled on HH-43B operations in Thailand reflect that 359 missions were flown through end December 1964. Of this total, 117 were flown in July, August and September utilizing four HH-43B's, while 242 were flown in October, November and December with a total of six helicopters based at Nakhon Phanom, Takhli and Korat. There was no record of any rescues accomplished by these 3 detachments during this time period.

(Ref Tab C.)

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(This page is Unclassified)

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Tab B

EVOLUTION OF LBR/ACR IN SEA (HH-43B/F)																																	
○ Init. Requirement ▲ PCS Action ● TDY Action ▼ Activity Terminated ⊕ Init. Requirement/TDY Action																																	
Task	Shred-out	FY 62				FY 63				FY 64				FY 65				FY 66				FY 67				FY 68							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
L B R	HH-43B																			○	▲	→											
	HH-43F																			○	▲	→											
A C R	HH-43B																			⊕	▲	→											
	HH-43F																			⊕	▲	→											

HARDWARE		TASK: TO PROVIDE ACR (Acft Based In Thailand)																SHRED-OUT: HH-43B			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HH-43B	0	-	0	6	6	6	8	8	8	3	0	-	-	-	-	-	-	-	-	0
PROGRAMMED	HH-43B	0	-	0	6	6	6	8	8	8	3	0	-	-	-	-	-	-	-	-	0
ACTUAL	HH-43B	0	-	0	2	4	6	7	10	11	3	0	-	-	-	-	-	-	-	-	0
ATTRITION	HH-43B	0	-	-	-	-	-	-	0	1/B	0	-	-	-	-	-	-	-	-	-	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	0	13	25	32	38	50	56	14	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	0	9	19	26	31	41	50	13	0	-	-	-	-	-	-	-	-	0
ASSIGNED	AIRCREW	0	-	0	13	25	32	38	50	56	14	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	0	9	19	26	31	41	50	13	0	-	-	-	-	-	-	-	-	0
MAINTENANCE	AIRCREW	0	-	0	100	100	100	100	100	100	100	0	-	-	-	-	-	-	-	-	0
RATIO - %	SUPPORT	0	-	0	100	100	100	100	100	100	100	0	-	-	-	-	-	-	-	-	0
MATERIEL																					
C/R	HH-43B	0	-	0	100	95.2	82.2	92.5	84.3	78.3	86.9	0	-	-	-	-	-	-	-	-	0
NORM	HH-43B	0	-	0	0	2.5	8.7	3.9	5.9	7.3	3.9	0	-	-	-	-	-	-	-	-	0
HCPS	HH-43B	0	-	0	0	2.3	9.1	3.6	9.8	14.4	9.2	0	-	-	-	-	-	-	-	-	0
STATISTICAL OPS DATA																					
SCRAMBLES	HH-43B	0	-	-	0	117	242	450	1036	1572	0	-	-	-	-	-	-	-	-	-	0
SAVES	HH-43B	0	-	-	-	-	0	1	11	3	0	-	-	-	-	-	-	-	-	-	0
FSK	HH-43B	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

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Due to the very limited range of the HH-43B and the fact that the helicopters at NKP were the only ones available for immediate aircrew recovery, it became necessary to jury rig long range tanks. Maintenance personnel developed and designed a system and carrier whereby two 55 gallon drums and a gravity feed system were installed in the helicopters. As fuel was used from the drums, they were disconnected and thrown overboard, thus increasing the range without having the cabin filled with surplus tankage during the rescue attempt.⁹ The primary mission of this unit was to provide ACR coverage of the BARREL ROLL and STEEL TIGER areas of operation. Although few missions were flown during this time period, the detachment never failed to respond when the need arose and was able to maintain a 100% mission available capability with at least one aircraft.¹⁰

Although there were no combat recovery manuals available that outlined tactics and techniques for ACR, some limited information on the subject was outlined in a Hq ARS letter dated 17 January 1964. It outlined that HH-43B's performing ACR missions in RVN would be dispatched in pairs, whenever possible, one to act as cover and backup for the other. Helicopters would be deployed only to predetermined crash and/or survivor sites and would not engage in extended pattern searches. They would fly normally at a minimum altitude of 1,500 feet en route to and returning from a recovery site. They would maintain 2,500 feet above the ground when 30 caliber fire was expected

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and 5,000 feet whenever 50 caliber was suspected. Every effort would be made to contact and identify survivors prior to attempting a pick up. Spiral, high speed approaches to recovery locations would be made and hovering and/or moving pick ups would be accomplished when possible to expedite departure. Departures would consist of climbing turns at high rates of climb to desired altitude and evasive action would be taken as required and no climbouts on course would be made. Traffic patterns would be irregular to avoid a predictable pattern and would not be started at less than 1,500 feet. Night operations of helicopter forces would be limited due to increased vulnerability of the helicopters to ground fire and obstructive tactics, in addition to the hazards normally restricting such operations.¹¹

ACR operations in the Republic of Vietnam were far more active than in Thailand. During the June - ~~end~~-December 1964 period, 959 missions were flown with three successful recoveries accomplished by the combat modified HH-43F. Of the total missions flown, 300 were accomplished by HH-43B's during July, August and September and 166 during October, November and December. The HH-43F's arrived in theater in late October and flew 493 missions during the last two months of 1964. (Ref Tab D.)

The large number of missions flown in both Thailand and RVN versus the small number of personnel recovered for this time period would indicate that the majority of these missions were in support of local base/crash rescue

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HARDWARE		TASK: TO PROVIDE ACR (Acft Based in RVN)																SHRED-OUT HH-43B/F			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HH-43B	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HH-43F	0	-	-	0	6	6	6	6	6	6	4	4	4	4	4	4	4	4	4	4
PROGRAMMED	HH-43B	0	-	-	0	6	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-
	HH-43F	0	-	-	0	4	6	6	6	6	4	4	3	2	4	4	4	4	4	4	4
ACTUAL	HH-43B	0	-	-	0	3	5	0	0	2	0	-	-	-	-	-	-	-	-	-	-
	HH-43F	0	-	-	0	4	6	6	6	6	6	6	6	4	4	4	4	0	-	-	0
ATTRITION		0	-	-	-	-	-	0	1/F	0	-	-	-	0	1/F	0	2/F	-	0	1/F	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	0	19	56	38	38	50	38	38	38	26	26	26	0	-	-	-	-
	SUPPORT	0	-	-	0	13	40	26	26	35	26	26	26	18	18	18	0	-	-	-	-
ASSIGNED	AIRCREW	0	-	-	0	19	56	38	38	50	38	38	38	26	26	26	0	-	-	-	-
	SUPPORT	0	-	-	0	13	40	26	26	35	26	26	26	18	18	18	0	-	-	-	-
MANNING RATIO - %		0	-	-	0	100	100	100	100	100	100	100	100	100	100	100	0	-	-	-	-
MATERIEL		0	-	-	0	100	100	100	100	100	100	100	100	100	100	100	0	-	-	-	-
O/R	HH-43B	0	-	-	0	20.1	78.7	0	0	81.0	0	-	-	-	-	-	-	-	-	-	-
	HH-43F	0	-	-	0	89.4	92.0	95.3	93.7	80.3	57.1	84.5	87.8	87.2	89.5	87.5	0	-	-	-	-
NORM	HH-43B	0	-	-	0	3.3	9.0	0	0	9.2	0	-	-	-	-	-	-	-	-	-	-
	HH-43F	0	-	-	0	9.9	1.8	4.1	5.2	5.4	5.5	8.5	6.2	4.7	6.9	5.9	0	-	-	-	-
NORS	HH-43B	0	-	-	0	6.6	12.3	0	0	11.8	0	-	-	-	-	-	-	-	-	-	-
	HH-43F	0	-	-	0	0.7	6.2	0.6	1.1	14.3	7.4	7.0	6.0	8.1	3.6	6.6	0	-	-	-	-
STATISTICAL OPS DATA																					
SCRAMBLES	HH-43B	0	-	-	0	300	166	0	0	118	0	-	-	-	-	-	-	-	-	-	-
	HH-43F	0	-	-	0	493	813	827	1128	1372	1171	1190	1104	700	1060	1135	0	-	-	-	-
SAVES	HH-43B	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HH-43F	0	-	-	0	3	6	5	13	33	55	77	32	26	23	29	0	-	-	-	-
FSK	HH-43B	0	-	-	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HH-43F	0	-	-	-	-	-	-	0	1	2	0	-	0	2	1	0	-	-	-	-

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coverage for tactical and training operations and not ACR. This was supported by end of tour reports submitted by ARS personnel assigned to Thailand detachments during 1964. One ARS officer stationed at Korat stated:

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During the first week of operations it became apparent that we could do more for the fighters than pull three minute alert when they flew. We decided that if it would not impose too heavy a work load on our maintenance personnel we would orbit with the FSK on all fighter take-offs and landings. The first day we did this we consumed about twice our scheduled time. This was due mainly to the fact that the fighters often landed after their scheduled landing time by as much as 30 minutes and we discontinued this practice. We did continue orbiting for departing fighters. This was the most critical phase, from our point of view, of their flight and we could be on a distressed aircraft almost immediately if it developed an emergency during take-off. The fighter pilots several times expressed their appreciation for this particular support. We orbited for day and night take-offs for the rest of our TDY at Korat AB and only when we were on "emergency only" flying status did we suspend this operation.

The Korat detachment flew normal LBR missions during this time period which consisted of search, search/rescue and host base support. From 15 August 1964 to 14 January 1965 this detachment flew 239 orbit missions, with only six rescue missions and four search missions.

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d. DID IT PERFORM AS EXPECTED? Within the recognized limitations of the HH-43 to perform the LBR/ACR missions in a combat situation, it no doubt far exceeded in performance and results what the majority expected. Although statistically this is not completely supported for this time period,

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(This page is Unclassified)

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its post 1964 record certainly established it as an effective vehicle for certain mission environments.

The Commander, MATS, reviewed ARS shortcomings in ACR within SEA. He stated that after the Korean War he felt USAF should have identified ACR as a distinct mission instead of an extension of normal activity. The ACR function was a combat mission which demanded an operating doctrine and a methodology in order to insure most efficient performance. He was not in any way intending to detract from the high-caliber performance of the ARS people in the field in SEA, who he thought were performing an outstanding job with the equipment and facilities available. On the other hand, he stated that he felt that action was required immediately to develop a study, which would be brought to the attention of the Chief of Staff, on what was considered to be short-range and long-range requirements for improvement in the SEA ACR mission area.

e. WHAT WERE THE DEFICIENCIES? By end 1964 there was a total of 11 ARS HH-43B's in SEA, 6 of which were located at NKP, Takhli and Korat, Thailand and 5 located at Bien Hoa and Da Nang in the RVN. Although some were dedicated primarily to the LBR mission and normally flew in a non-hostile environment, all were available for support of the ACR mission.

The HH-43B had a True Air Speed (TAS) of 85-90 knots with a 75 NM

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radius of action. It could hover out of ground effect, carry two litter cases or six passengers and was equipped with a 100 foot/600 lb. hoist. In addition to the eleven HH-43B's, there were four HH-43F's, two located at Da Nang and two at Bien Hoa all with a primary mission of ACR. The "F" model had approximately the same TAS as the "B" model, but the radius of action had been increased to 130 NM. It was equipped with armor plating and self-sealing fuel tanks, could hover out of ground effect and had a 200 foot/600 lb. hoist. It had a capacity for one litter case or three passengers.¹⁵ The HH-43B was inadequate for the combat recovery role in terms of:¹⁶

- (1) Range.
- (2) Sustained Instrument Flight Capability.
- (3) Armor.
- (4) Speed.
- (5) Single engine only.

The range of the "B" model did not permit any flexibility and was unsatisfactory when related to the performance of the tactical aircraft they were supporting. It had a limited instrument flight capability and could be used for unavoidable instrument flights not to exceed 30 minutes actual weather due to pilot fatigue.¹⁷ The early fatigue was caused by lateral and vertical vibrations, general instability and poor instrument location. The only radio navigation aid installed was a low frequency Automatic Direction

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Finder (ADF). No precision approach system was installed so if instrument flight was attempted a Ground Controlled Approach (GCA) must be relied upon. The short-range capability precluded effective Instrument Flight Rule (IFR) operations due to the requirement for alternate airports and fuel reserves. In addition only the engine had adequate anti-icing equipment installed.¹⁸

The HH-43B was employed in a combat environment with no armor protection for personnel or critical helicopter components. The rotor blade was no more vulnerable than any other helicopter blade and the rotor head was average with respect to withstanding battle damage. The blade flaps and controls leading to them were vulnerable to battle damage. The control rods were made of steel and no protection was possible. Flak curtains and body armor had to be used for the crew.¹⁹ On 23 July 1964 Hq ARS sent a message to Hq MATS stating:²⁰

. . . . continued utilization of unmodified HH-43B helicopters in this hostile environment presents an unwarranted hazard due to lack of proper protection resulting in exposure of vital aircraft components and aircrews to enemy small arms ground fire. Accordingly, we request that immediate action be taken to accelerate modification of the HH-43B, and use only the combat configured helicopter in support of SEA aircrew recovery operation in hostile areas.

The HH-43B's relatively low airspeed was a limiting factor in the ACR mission. It was redlined at 105 knots and rotor induced vibration

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levels were excessive at maximum airspeeds for all gross weights, altitudes and rotor speeds. Low airspeed was also a limiting factor in prosecuting the LBR/fire suppression mission. Escort of distressed aircraft from final approach to completion of the landing roll was limited to the speed of the helicopter which was considerably below the approach speeds of modern tactical aircraft. Multiengine turbine power was mandatory based on safety and reliability considerations.²¹

The HH-43F modification corrected to some degree the range, instrument flight capability and armor problems. A subsequent requirement for droppable external auxiliary fuel tanks was submitted to HQ USAF. It was hoped that the radius of action of the "F" model could be extended to approximately 250 miles; however, this range was still inadequate for the combat recovery role.²²

2. WHAT ELSE WAS AVAILABLE?

Twin-turbine, high-speed, all-weather helicopters were developed as a prime weapon system for use in Anti-submarine Warfare (ASW). Many of the requirements and elements of the ASW mission had valid application to the combat air rescue helicopter mission. These elements were the ability to transit all-weather conditions, increased range for search, prolonged hover, self-contained Doppler navigation system, increased cruise speed and a triphibious capability. These and other improvements

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were incorporated in the S-61, which was the forerunner of the CH-3C.²³

The CH-3C was selected by the Air Force to meet the needs of Specific Operational Requirement (SOR) 190. Three of the five missions for which it was procured were those for which MATS/ARS was responsible. These were aerospace hardware recovery, combat recovery and airlift. ARS viewed the CH-3C's as the best available Vertical Takeoff and Landing (VTOL) aircraft to complement programmed fixed-wing HC-130's to provide an updated combat rescue and hardware recovery force. In May 1964, USAF redirected MATS as the CH-3C "using command." ARS took over the actual test program from Air Training Command (ATC). As a result of the Category III tests conducted for USAF by the ARS detachment at Patrick AFB, ARS became even more enthusiastic about the CH-3C. In all cases, performance of this helicopter had exceeded the manufacturer's claim. It would provide a big step forward in the ultimate goal of an Air Rescue force consisting of a carefully computed mix of a minimum number of aircraft types. ARS submitted a Qualitative Operational Requirement (QOR) to better adapt the CH-3C for the ARS mission.²⁴

WHY WAS IT NOT USED? To fully understand why the CH-3C was not used in SEA during the 1962-64 time frame and to fully appreciate the effort put forth to preclude ARS being caught without an in-being combat aircrew recovery capability, the following recap of efforts to obtain area coverage helicopters is provided:²⁵

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22 Dec 1961: Hqs ARS/DCS Plans letter to MATS.
Subject: Expansion of Helicopter Role
Projects Requirements for Long Range
Helicopter. Off the shelf procurement
recommended.

19 Feb 1962: ARS study on Proposed Force Structure
recognizes requirement for 18 long range
helicopters, three ARSqs of six each to
satisfy (1) materiel recovery (2) wartime
recovery requirements.

17 Jul 1962: ARS submitted Proposed Force Structure
stating requirement for 18 HX-2 long
range helicopters.

2 Nov 1962: Commander ARS letter to MATS stating
urgent requirement for helicopters
referenced above.

June 1963: USAF directed CH-3C for follow-on
procurement (111 airframes by FY 69) to
meet SOR 190 stated mission requirements.
It should be noted that all SOR 190 missions
were MATS airlift in nature. SOR 190 did
state that in war situations, the aircraft
would be primarily used for casualty
recovery and essential logistic airlift
operations that require a vehicle with
hover and VTOL capabilities.

14 Aug 1963: Hqs ARS/DCS Plans message 14-H-32 to
MATS recommended transfer of all MATS
CH-3C resources and missions to ARS.

30 Sep 1963: Command monthly letter to MATS. ARS
participation in SWIFT STRIKE III confirmed
requirement for long range helo units for
combat zone retrieval, long range require-
ments and to support contingency plans.

25 Oct 1963: Hqs ARS/DCS Plans letter to MATS.
Subject: ARS Rescue/Recovery Force

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Requirements. Stated requirement for 18 CH-3C, 6 each in 3 ARSqs located in North American, Pacific and Atlantic areas. Included Southeast Asia data.

January 1964:

System Package Plan (SPP) published for SOR 190 long range rotary wing support system (CH-3C) was:

(1) The approved plan to fulfill the requirement for long range rotary wing support system as stated in SOR 190 dated 11 Sep 61.

(2) Sections five and nine of the SPP reflected the MATS/ARS requirements.

22 Jan 1964:

As late as 22 January ARS/MATS was programmed for 15 CH-3C's. (Eight in support of the Aerospace Hardware Recovery effort at Patrick and Goodfellow Air Force Bases and seven in support of the Air Photographic and Charting Service (APCS) HIRAN project.)

Subsequent documentation indicated that of the 107 airframes (CH-3C) programmed into USAF for airlift, aerospace hardware recovery and war casualty recovery, none were programmed into ARS. They were fragmented and programmed into SAC, ADC, AFSC, ATC, APCS and AWS. ²⁶

Over and above the efforts outlined above, which were not necessarily SEA oriented, the Commander, ARS, on 18 November 1963 identified a critical requirement for MATS professional Air Rescue Service forces in Vietnam. In essence he was concurring with PACAF's stated requirement for a suitable aircrew recovery vehicle, namely the CH-3C. In a letter to

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Headquarters MATS, he stated: ²⁷

Highly trained, professional Air Rescuemen, equipped with a minimum of six, high speed, long range, all-weather CH-3C helicopters are most urgently required to comply with USAF, CINCPAC, PACAF and MATS (WPS) Plans tasking Air Rescue to recover downed aircrews. . . .

The CH-3C was bought by the Air Force as a general utility helicopter. It was not configured for combat operations, and did not have auxiliary tanks for extended range or loiter. In addition, there were no provisions for suppressive armament. ²⁸ Initially, in 1964 ARS received authorizations for CH-3C helicopters which, although long range in terms of rotary wing state-of-the-art, could not provide the degree of capability necessary to respond to the current Southeast Asia out-of-country long-range ACR requirements. To compensate for range extension on this helicopter, ARS envisioned the conceptual application of in-flight refueling for helicopters. ²⁹

The CH-3C as did the HH-43B required modification if it were to be effectively employed in Southeast Asia. The CH-3C was available prior to the time ARS provided HH-43B's to prosecute the LBR/ACR missions in SEA. The cost of the CH-3C was \$860,000, whereas the HH-43B priced out at \$467,000 per copy. The estimated cost to modify the CH-3C to the HH-3C combat configuration was \$150,000 per airframe for the first six and \$35,000 for each airframe thereafter. It must certainly be classed as an extremely austere effort by any standard when considering that two years after the Air

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Force had been operating in Vietnam and at a cost of \$225,000 per airframe, Air Rescue Service was only able to muster a force of exactly six small helicopters to rescue U.S. airmen. These had been hastily equipped with sufficient armor to permit ARS crews to operate in a limited combat environment.³⁰

This meager effort directed toward combat aircrew recovery, particularly when compared to the area of hardware recovery, left an aura of doubt as to the importance of people versus hardware. This was pretty strongly pointed out in a briefing to the MATS world-wide Traffic Conference on 17 September 1964 when a senior ARS staff officer stated:³¹

Within the area of hardware recovery, the Air Rescue Service has been able to recover approximately 98% of all requirements. This high percentage has been made possible by good homing equipment provided on the hardware item to be recovered. This is only natural since most of the emphasis and money over the past 4 to 5 years has been placed on the recovery of aerospace hardware.

The percentage of humans recovered has been extremely low. It appears to me that this country for the first time in its history, has placed a higher value on hardware than it has on human lives.

3. ADDITIONAL CONSIDERATIONS:

On 24 July 1964 the Commander, ARS, in a briefing to Commander, MATS, stated:³²

One of our prime objectives is to obtain, as soon as

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possible adequate equipment that would provide us an "in-being" combat aircrew recovery capability. The CH-3C is the "off-the-shelf" equipment that could be provided to give us an immediate "best" capability to accomplish this mission . . . we are accomplishing a study which will indicate our world-wide requirements.

In late 1964, PACAF identified an immediate requirement for an extended range aircrew recovery vehicle (HH-3C) for use throughout the Pacific Command (PACOM), with first priority to the Southeast Asia units. Their staff study on this subject outlined that Air Rescue Service was expected to have this capability and had been severely criticized for not having it, especially in Southeast Asia. They stated a requirement for three
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HH-3C's at each of the following locations:

Bien Hoa, RVN

Pleiku, RVN

Da Nang, RVN

Can Tho, RVN

Nakhon Phanom, Thailand

The HH-3C should not, however, be used to replace the HU-16 or the HH-43 LBR helicopters in the PACOM except on a strict selective mission basis. The HH-3C generally did not have the extended range and endurance required to perform search and orbit missions unless extensive ferry tankage was installed in the HH-3C or air-to-air refueling was used. The use of

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numerous auxiliary fuel tanks or tanker refueling was not considered practical for normal SAR coverage which was required on a routine day to day basis. The HH-43 was adequate for the crash/rescue fire suppression role near the air base and should be retained; however, it was not adequate to perform the majority of recovery missions and would still be required at the home base during the time the HH-3C's were deployed on a mission. Where the HH-3C was proposed for collocation with the HH-43B, the number of HH-43B's required for LBR operations could be reduced to two.

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In December 1964, ARS and USAF personnel held a meeting to consider the possibility of placing six combat modified CH-3C's in SEA instead of 12 modified HH-43B's and to what extent the CH-3C could replace the HU-16's. At this meeting it was generally concluded that:

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The all-weather CH-3C could replace and improve on the HU-16 aircraft's capability in those items that were peculiar to the HU-16, such as water recovery.

The CH-3C could obtain a three-minute alert position.

The fire suppression capability of the CH-3C was similar but greater than that of the HH-43B.

The HH-3C could perform night, over water rescue/recoveries transiting IFR weather.

Every effort should be made to put six CH-3C's into SEA instead

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of 12 additional HH-43B's.

Additional CH-3C's be sent to SEA and replace the remaining HH-43B's and HU-16's.

It was recommended that the first three modified HH-3C's be placed at Bien Hoa and the second three at Nakhon Phanom, and that ten additional modified HH-3C's be sent to SEA as soon as possible making a total of 16 HH-3C's in theater. These 16 helicopters would have the capability to replace the coverage provided by both the HH-43's and the HU-16's. Until PACAF had time to completely acquaint themselves with the capabilities of the HH-3C, one or two HU-16's could be retained in the SEA complex. It was estimated that the attrition rate for the HH-3C would be 25% of the recommended force computed over a 12-month period in the combat environment. Four combat configured HH-3C's per year would have to be programmed for those attrited. This attrition factor was almost 50% less than that computed for the combat modified single-engine HH-43F's.³⁶

The most compelling rationale in the USAF/ARS recommended SEA SAR force posture as versus that of PACAF was that it would achieve the following results:³⁷

Reduce the additive manpower expenditure in the PACAF proposal by 178 spaces.

Reduce the cost in airframes from 30 to 16.

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Reduce substantially the airframe modification cost. 1.2 million vs. 2.7 million.

Eliminate the TDY LBR forces and eliminate or greatly reduce the HU-16 rotational requirement.

Improve logistics by reducing the number of aircraft types and numbers and fixed-wing installations. Five operating bases in ARS proposal vs. eight in PACAF's. One aircraft type in the USAF/ARS proposal vs. four in PACAF's.

And last but not least a superior operational capability at overall reduced costs.

4. SUMMARIZE LESSONS LEARNED:

SAR equipment was not adequate to perform the wartime ACR mission.

Development of SAR hardware had not kept pace with the advances in the tactical weapons systems which required support, nor had it been designed to operate in the same environment. SAR forces were compelled to do the best they could with what they had.³⁸ The only vehicle available for land ACR was the HH-43B helicopter. Designed for airborne fire suppression and an LBR mission, it was not suitable for ACR in a hostile environment. A time consuming modification

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of the HH-43B was required to increase its range, provide armor protection for the crew, install self-sealing fuel tanks, etc. The HH-43F resulted but was considered adequate only as a "minimum acceptable interim vehicle."³⁹

The lack of adequate SAR equipment was a result of the reorganization of Air Rescue Service in 1958. The ARS reorganization directive published by HQ USAF, 26 September 1958, stated:⁴⁰

ARS will be organized, manned, equipped, trained and deployed to support peacetime air operations.

No special units or specially designed aircraft will be provided for the sole purpose of wartime search and rescue (SAR).

Wartime rescue operations will be dictated by the capabilities of equipment used for peacetime SAR, and will be conducted in accordance with JAAF and JCS Standard Wartime SAR procedures.

The above directive sired the erroneous belief and policy statement that "Wartime SAR procedures were essentially an extension of the peacetime procedures,"⁴¹ and forced planners to envision that contingency tasks would be accomplished by an extension of the peacetime effort with the same equipment used for both.

The MATS Commander brought the SAR dilemma to light in

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a briefing to the Chief of Staff Air Force on 28 October 1965,
when he stated:⁴²

The Air Rescue Service was called on to provide a combat aircrew recovery capability in Southeast Asia in May 1964. However, the first published recognition of a wartime role was not contained in any document until it appeared in the USAF Wartime Guidance in March 1965. Since this publication receives limited distribution, the authority for support that Rescue needs to develop a combat capability is not widely known.

5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

That the development of SAR equipment keep pace with advances in the tactical weapons systems and be designed to operate in the same environment.

SAR vehicles conceived without regard to the tactical weapons systems they are to support seriously impair the ACR capability. Range, armor, sustained instrument flight capability and the ability to survive under combat conditions are of equal importance to the recoverer and the recovered. Speed is another important consideration, but does not have to equal that of tactical vehicles. However, higher recovery vehicle speed should be constantly strived for to enable the most rapid ACR possible.

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HARDWARE ANALYSIS

1962-1964

FOOTNOTES

1. Ltr, Vice Comdr PACAF to Hq ARS, Subj: Southeast Asia SAR Requirements, 15 Dec 1964, pp. 1-2.
2. Briefing, General Estes and Col Brooks to CSAF, Subj: Combat Recovery Operations in Southeast Asia, 28 Oct 1965, pp. 4, 6.
3. Ltr, Comdr PARC to Comdr ARS, 23 Mar 1964, p. 1.
4. Briefing, General Estes and Col Brooks, 28 Oct 1965, op. cit., pp. 1-3.
5. Qualitative Operational Requirement for Range Extension of the HH-43B 21 Feb 1963, p. 1.
6. Ibid., pp. 1-2.
7. Briefing, General Estes and Col Brooks, 28 Oct 1965, op. cit., pp. 4-5.
8. Ibid., p. 2.
9. Ltr, Hq MAC (MAOCX/Col Mask/3388) to Hq ARRS (ARXDC), Subj: Corona Harvest Study (U) (ARXDC Ltr, 3 Oct 68), 27 Nov 1968, p. 2.
10. Ltr, Capt Donald D. Metzinger to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, 6 Dec 1968, p. 2.
11. Ltr, Hq ARS (ARCCO) to MATS, Subj: (S) Use of HH-43B and HU-16 Aircraft for Combat Aircrew Rescue/Recovery Mission in Republic of Viet Nam w/Tabs A thru G, 17 Jan 1964, Tab C - p. 2.
12. Ltr, Capt Philip S. Prince (Det 10/EARC) to Comdr EARC, Subj: End of Tour Report, 18 January 1965, p. 4.
13. Ibid., pp. 5-6.

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(HARDWARE ANALYSIS Footnotes - continued)

14. Ltr, Hq MATS (MAODC) Memorandum For the Record, Subj: (C) Improvement of ACR Capability in SEA, 19 Oct 1965, p. 1.
15. PARRC Input to PACAF Battle Staff Book, 31 December 1966, p. 6a.
16. Ltr, Hq ARS (ARXDC) to MATS (MAODC), Subj: Combat Recovery Operations in Southeast Asia, 4 Nov 1965, w/Attachment 3 of 14 Attachments to Proposed Ltr to USAF.
17. Ltr, Hq ARS (ARCCO) to MATS, 17 Jan 1964, op. cit., Tab B - p. 2.
18. Ltr, Hq MAC (MAORQP), Subj: ROC MAC-5-68, Improved Local Base Rescue/Recovery (LBR) Helicopter, 1 Aug 1968, w/1 Attachment (ROC MAC-5-68, w/4 Atchs), p. 1.
19. Ltr, Hq ARS (ARCCO) to MATS, 17 Jan 64, op. cit., Tab B - pp. 1-2.
20. Msg, Hq ARS (ARODC 078-G) to Hq MATS (MAOCO/AT), 23 July 1964.
21. Ltr, Hq MAC (MAORQP), 1 Aug 1968, w/1 Attachment, op. cit., pp. 2-3.
22. Ltr, Hq ARS (ARXDC) to MATS (MAODC), 4 Nov 65, op. cit., Atch 3.
23. Briefing, Col Brooks to Hq MATS, Subj: "Deep Look" Briefing (Revised), 9 April 1965, p. 22.
24. Ibid., pp. 20-26.
25. Recap of Efforts to Obtain Area Coverage Helicopters, undated, pp. 1-4.
26. Briefing, Subj: "Deep Look" Briefing, 1965, p. 18.
27. Ltr, Comdr ARS to Comdr MATS, Subj: Critical Requirements for MATS Professional Air Rescue Forces in Viet Nam (C), 18 November 1963, p. 1.
28. Briefing, General Estes and Col Brooks, 28 Oct 1965, op. cit., p. 6.
29. Briefing, ARRS Global Operations, Plans and Programs Briefing; presented by Col H. H. Bridges at the Atlantic ARRC Commanders Conference, 28 Feb 1968, p. 6.

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(HARDWARE ANALYSIS Footnotes - continued)

30. Briefing, Hq ARS to Comdr MATS, Subj: Southeast Asia SAR Requirements (1965), 17 Feb 1965, pp. 12, 15.
31. Briefing, Hq ARS to Hq MATS World-Wide Traffic Conference, Subj: Air Rescue Service Briefing, 17 Sept 1964, p. 18.
32. Briefing, General Williams to General Estes, Subj: Standard ARS Briefing, 24 July 1964, p. 23.
33. Ltr, Hq PARC (DOAR) to CINCPACAF (DO), Subj: HH-3C Helicopter Requirements in the Pacific Command, 3 December 1964, w/1 Atch and 1st Ind dated 9 December 1964, Atch 1, p. 4.
34. Ibid.
35. Briefing, Hq ARS to Comdr MATS, 17 Feb 1965, op. cit., pp. 7-8.
36. Ibid., pp. 9-10.
37. Ibid., pp. 14-15.
38. Ltr, Comdr PARC to Comdr ARS, 30 Jul 1964, p. 2.
39. Briefing, Gen Estes and Col Brooks to CSAF, op. cit., 28 Oct 1965, pp. 4, 6.
40. Ltr, USAF to MATS, 26 Sep 1958, Subj: Reorganization of Air Rescue Service, p. 1.
41. Msg, CINCPACAF, DO 31334 Mar 66 to 2d AD, Subj: Review of AFR 55-7.
42. Briefing, Gen Estes and Col Brooks, 28 Oct 1965, op. cit., pp. 1-3.

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PERSONNEL ANALYSIS

1962-1964

ARS personnel were not deployed in support of the HH-43 LBR/ACR tasks until mid-1964. Five small detachments were activated during June-December 1964 involving some 150 personnel. Due to the minimum number of personnel actions required during the 1962-1964 time frame, this analysis will address the Air University format for this period in brief.

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WERE THERE ENOUGH PEOPLE?

In 1961 the armed conflict between the established South Vietnam government and the Communist supported Liberation Forces was expanded and United States assistance was introduced. In order to keep the United States involvement under the JUNGLE JIM and FARMGATE programs semi-covert, strict ceilings were placed on United States manpower authorized for Southeast Asia.¹

The need for a professional SAR force in SEA was recognized in 1962 and a request for such a force was initiated by the Commander, Det 3, PARC in coordination with the 2d Air Division. The Commander, Det 3, PARC submitted a second study in 1963 outlining the need for professional Rescue

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units in SEA.² In November 1963 the Commander, Air Rescue Service, strongly recommended that a Combat Aircrew Recovery Force be established in SEA.³

The first ARS helicopter unit utilized in SEA was the LBR portion of the 33d ARSq stationed at Naha AB, Okinawa. Two H-19B helicopters with adequate aircrew, ground maintenance and administrative support personnel were placed on TDY from 1 July to approximately 18 September 1962 to provide rescue support to the 3d Aerial Reconnaissance Task Force (ARTF), 6010 Tactical Group at Takhli AB, Thailand.⁴

In June 1964, the LBR portion of the 33d ARSq, Naha AB, Okinawa, now equipped with HH-43B helicopters, was again deployed on a TDY basis to Nakhon Phanom AB, Thailand. This unit was later designated as Det Provisional Third, PARC.⁵ Due to some of the personnel at Naha AB not being eligible for this TDY deployment, it was necessary to provide personnel augmentation from CONUS ARS resources in order to provide 100% manning. The unit provided full LBR support and a limited ACR capability.

In August 1964, a second and third LBR detachment, previously alerted and equipped with HH-43B aircraft, were deployed to SEA. Detachment 2 of Central Air Rescue Center (CARC) located at Minot AFB, N. Dakota was directed to Da Nang and Detachment 4 of Western Air Rescue Center (WARC)

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located at Paine Fld, Washington was directed to Bien Hoa AB, Vietnam. Both units were deployed on a TDY basis under direction and guidance provided by ARS OPLAN 510. The Da Nang unit was designated Det Provisional Second, PARC and the Bien Hoa unit was designated Det Provisional First.⁶ Personnel augmentation was again required in each of the deployed detachments to provide 100% manning due to scheduled separations, Permanent Change of Station (PCS) reassignments and assigned returnees from remote tour areas.

Almost concurrently Detachment 10 of Eastern Air Rescue Center (EARC) located at Maxwell AFB, Alabama was deployed to Korat, Thailand. The detachment forces were split into two C-124's, so as to be able to start operations as soon as possible after the first helicopter's arrival overseas. The first contingent arrived on 13 August, with the second group arriving the next day. Thinking that they were deploying TDY for 30 days rather than for the five months that they remained at Korat, they did not bring many items that were required for sustained TDY operation. Technical Order (T.O.) publications left behind, lack of work stands and personnel severely hampered the initial effort. The detachment maintenance personnel and maintenance personnel assigned to the ARS HU-16 flight already at Korat, worked on both the HH-43's and HU-16's as the needs dictated. For the most part, specialist support for the helicopters was obtained from the HU-16B flight and when

required, certain specialists were requested from the Tactical Fighter Squadron.⁷

The administrative section initially consisted of two fully qualified personnel. In September, 1964, the 70230 was recalled to the parent organization and the 70250 was replaced with a cross trainee 70210. The administrative workload imposed on the detachment was normally quite high coupled with the additional requirements of the HU-16 flight, made it an impossible task for an inexperienced clerk.⁸

The first two PCS aircrew recovery detachments were established effective 20 October 1964. These detachments were designated as Det 4 located at Bien Hoa AB and Det 5 located at Da Nang. Six HH-43B helicopters were combat modified and redesignated as HH-43F's. All personnel to operate and maintain these aircraft were provided from ARS CONUS resources. Personnel and equipment were deployed and arrived in SEA during October, 1964. The initial mission of these two detachments was primarily ACR with a secondary role of LBR.⁹

Upon arrival of personnel and equipment of Det 4 at Bien Hoa and Det 5 at Da Nang, Det Provisional First was moved from Bien Hoa to Takhli, Thailand and Det Provisional Second was moved from Da Nang to Nakhon Phanom, Thailand effective 20 October 1964.¹⁰ Shortly after arrival of

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Det Provisional Second at Nakhon Phanom, Det Provisional Third at Nakhon Phanom was inactivated (16 November 1964) however, personnel requirements in SEA remained the same since the aircraft and other equipment remained in ARS SEA resources.

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2. WERE THEY THE RIGHT PEOPLE?

The requirement for a professional LBR/ACR force was identified in 1962, and the decision to use the HH-43 for this mission was made in 1964. The urgent requirement for these forces at this point in time dictated TDY deployment of ARS LBR detachments to support the initial SEA SAR effort. The fact that detachments were deployed that for the most part were manned with qualified aircrew and support personnel insured that the required skills were available during the early deployments.

It should be kept in mind that the professional ARS LBR/ACR force in Southeast Asia during this time period provided only a very small portion of the total SAR effort required. The majority of SAR forces utilized to prosecute SAR missions were opportune forces which, of course, had not been initially identified or trained for the SAR role. Therefore, the aircrew personnel providing this opportune support could not be considered as possessing the required skills necessary to effectively accomplish the search and recovery mission.

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3. WERE THEY ADEQUATELY TRAINED?

ARS personnel assigned during this period consisted primarily of operational personnel (pilots, maintenance and pararescue personnel). These personnel, for the most part, were from in-house ARS resources and as such were fully qualified in the operation and maintenance of the HH-43.¹²

The aircrew personnel that provided opportune SAR support were, of course, ill-equipped and ill-trained for the SAR mission. One ARS officer stationed at Tan Son Nhut AB during 1964 had this to say about opportune Army SAR forces:¹³

The Army on occasion was dropping their choppers in the water and if they were lucky they would recover one or two people. Why -- no training! This distressed Joe and I. We used to visit the Army Officer's Club at Tan Son Nhut from time to time so we knew many of their troops. I will never forget, one afternoon the Army had dropped another one in the water in IV Corps without a survivor. We had known the pilots and were a bit down. After work, both of us off for a change, were in the Army Club. No one was feeling too cheery. The Squadron Commander came in for a drink and Joe for openers asked "when are you going to stop killing your troops?" Yes, you could have heard a pin drop.

This rash statement by a "blue suiter" led to an Army program, much like the one the Air Force had, of strapping pilots in a cockpit with flight gear on and driving them down a wire into a swimming pool. By the time this ARS officer departed Vietnam, the Army had a full-fledged training program going.¹⁴

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4. WAS THE REPLACEMENT/ROTATION PROGRAM ADEQUATE?

This problem could not be properly addressed for the 1962-64 time period, as LBR forces had not been in Vietnam long enough for any problems of this nature to generate. The majority of ARS SAR forces were deployed TDY, whereas the first ARS PCS forces were not due for rotation until late 1965.

5. DISCUSS ANY PERSONNEL DEFICIENCIES: Deficiencies with regard

to ARS personnel did not present any major problems during this period.

The use of opportune forces did significantly inhibit the effective accomplishment of the SAR mission. It must be reiterated that the major portion of the SAR effort during this period and, for that matter, well into the 1965-68 time period was accomplished by opportune Army, Navy, Marine and Air America forces.

6. WHAT WERE MAJOR FACTORS AFFECTING MORALE? The excessive

amount of TDY required to maintain deployment to SEA of LBR detachments

until PCS personnel arrived was certainly a major factor affecting morale.

Separation from family and friends on a relatively short notice basis

compounded this problem. This was particularly so since these same indi-

viduals were aware that they would probably have to complete an unaccompanied

tour in SEA in the near future. Despite the many inconveniences experienced by

numerous personnel during these early deployments, the attitude generally

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prevailed that "there was work to be done and let's get on with the task at hand." Short notification for deployment, no doubt, caused some unnecessary family hardships that perhaps could have been eliminated had contingency planning identified priorities for units that would be deployed in the event that a contingency generated. Everything taken into account, the morale of ARS personnel in SEA was exceptionally high. As one officer put it, "I hesitate to comment on morale in SEA because generally speaking morale was better than anywhere I have been in Rescue." ¹⁵ As still another officer put it: ¹⁶

Our operation at Korat AB was one we will long remember. Our working relationship with the first Base Commander was excellent. His replacement was always ready to listen to our problems and lend assistance when necessary. Other personnel . . . too numerous to mention, materially aided us in our operations. The spirit of cooperation was always high and without it we would have found it impossible to function as we did. Detachment 3 (PARC) . . . provided much guidance and all supply support, again without which we could not have operated. We felt that we operated as a team with all the other forces here supporting the SEA mission and departed with a sense of accomplishment and pride. We also feel that we turned over to our replacements a smoothly functioning organization ready, willing and able to back the mission at any time for any purpose.

7. WHAT WERE SIGNIFICANT PERSONNEL ACCOMPLISHMENTS?

This volume addresses only the LBR mission in Southeast Asia, which did not get underway until late June 1964. This six months period of operation was not considered lengthy enough to properly evaluate any significant

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personnel accomplishments. It can be stated that despite inadequate planning, short notification etc., as SEA SAR requirements were identified and approved, personnel were provided on a timely basis to meet these commitments.

8. ADDITIONAL CONSIDERATIONS: None.

9. SUMMARIZE LESSONS LEARNED:

Air Rescue Service was not manned to support prolonged contingency operations.

The constant TDY support of SEA from CONUS and PARC LBR units soon depleted available ARS personnel resources. The problem was compounded when the TDY status of ARS units was changed to PCS and as additional ARS units were formed in SEA. ARS was the sole source of HH-43 personnel and the majority of these had served TDY tours in SEA which would be deducted from a PCS tour. The lead time necessary to train personnel from other sources required additional TDY by ARS personnel. ARS was unable to retain many experienced overseas returnees because the number of HH-43 personnel required in the CONUS was less than the number required overseas.

10. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

That SAR units be sufficiently manned during peacetime to meet

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wartime contingencies.

The continued requirement for wartime SAR must be recognized. Peacetime forces must maintain adequate personnel levels and be structured to react to wartime contingencies. The only method of retaining an adequate experience level in SAR units was the constant TDY of ARS personnel. The random assignment of personnel from other sources into the SAR system required a lead time of six months for enlisted and nine months for officer aircrew members. Shorter lead times did not permit necessary training, placed an undue training burden on the receiving unit and impaired the SAR capability.

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PERSONNEL ANALYSIS

1962-1964

FOOTNOTES

1. Air War College Research Report No. 3765, Subj: Analysis and Evaluation of Search and Rescue in Out/Country Operations, Apr 68, by: Franklin E. Schneider, p. 14.
2. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, p. 1.
3. Ltr, Comdr ARS to Comdr MATS, Subj: Critical Requirements for MATS Professional Air Rescue Forces in Viet Nam (C), 18 November 1963, p. 1.
4. Ltr, Det 8 AARRC (Capt Gordon L. Hall) to Hq ARRS (ARXDC), Subj: Resume of SEA Tour, 21 Oct 1968, p. 1.
5. MATS S.O. G-122, 19 Aug 1964, op. cit.
6. Ibid.
7. Ltr, Capt Philip S. Prince (Det 10, EARC) to Comdr EARC, Subj: End of Tour Report, 18 January 1965, pp. 1-4.
8. Ibid., p. 13
9. MATS S.O. G-131, 16 Sept 1964.
10. Ibid.
11. MATS S.O. G-171, 16 Nov 1964.
12. Ltr, Capt Donald D. Metzinger to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, 6 Dec 1968, p. 2.
13. Ltr, Major John R. Cox to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, 12 November 1968, pp. 9-10.

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(PERSONNEL ANALYSIS Footnotes - continued)

14. Ibid., p. 10.
15. Ltr, Capt Gordon L. Hall to Hq ARRS (ARXDC), Subj: Resume of SEA Tour, 21 Oct 1968, p. 2.
16. Ltr, Capt Philip S. Prince (Det 10/EARC) to Comdr EARC, Subj: End of Tour Report, 18 January 1965, p. 16.

SUPPORT ANALYSIS

1962-1964

1. HOW DID THE FOLLOWING SUPPORT ACTIVITIES OR FUNCTIONS SIGNIFICANTLY INHIBIT OR ENHANCE THE ACHIEVEMENT OF THE TASKS?

a. FACILITIES:

The rapid buildup of ARS forces in SEA presented many problems in the area of facilities, which ran the gamut from totally inadequate to nonexistent. In the early stages of deployment nearly every ARS unit had to prepare and maintain its initial operating facilities which included aircrew alert rooms, storage facilities, aircraft parking/alert pad requirements, hangar space, billeting, shop space, periodic and maintenance docks, etc.

Starting with the deployment of the first ARS helicopter detachment to Takhli on 2 July 1962 the lack of adequate facilities remained the major problem throughout the 1962-64 time period. One of the H-19B Rescue crew commanders that provided rescue support at Takhli during July-September 1962 stated:¹

Facilities were very crude during our stay at Takhli. For the first month the unit operated out of one squad tent. Later we received a small, wooden, transportable shack. Both of these structures came to grief on the night before we received orders back

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to Okinawa. On this occasion a brief, very violent thunderstorm tore down our tent and removed the roof from our shack. No one was injured but everything was soaked and maintenance and supply records were scattered to the four winds.

When the buildup of ARS forces began in June 1964, facilities problems compounded with the deployment of each new unit to SEA. The first detachment deployed as part of this force buildup was the LBR unit at Nakhon Phanom. Facilities problems encountered by the detachment that deployed to this "bare base" were covered in detail in ARRS Corona Harvest, Volume I, USAF SAR in SEA, Section IV C, dated 31 January 1969.

To preclude redundancy it will suffice to say that many problems were encountered with the "bare base" operation and austere facilities provided by the 2d AD at NKP. There were no quarters, messing facilities, food other than "C" rations, potable water, POL, refueling or communication facilities available upon arrival at NKP. ²

The first ARS Detachment Commander at Korat had this to say about facilities: ³

Our first operations, maintenance and storage facilities consisted of three 30 by 15 foot canvas tents and were replaced in time by three 16 by 32 foot hutches. The hutches were of wood frame construction, screened in walls and tin roofs. . . . arrangements were made with the Royal Thai Air Force (RTAF) Chief of Maintenance for hangar space on an urgent need basis. The RTAF hangars were approximately 2 miles from

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our operations and due to the lack of flight line towing vehicles it was impractical to consider hangaring the helicopters over night, every night.

In November 1964, the Detachment moved from one end of the flight line to the other to its permanent location. Once permanently sited, a request was submitted for a hangar facility for two helicopters, ramp lighting, alert helicopter pad facilities and a new maintenance/storage hutch. All were approved. ⁴

In late 1964 when an LBR detachment was moved into Takhli, facilities had not improved appreciably from when the H-19 detachment left in September 1962. Takhli was experiencing growing pains and could just barely stay ahead of the increase in personnel. When the Detachment arrived on 20 October 1964, they had one little room in the fire department. Another shortcoming was the lack of any personal equipment or 538 shop and the fact that hangar facilities were completely nonexistent. There were no facilities for painting aircraft so the two assigned HH-43B's which had been damaged at Bien Hoa were painted with spray cans. ⁵

The first ARS units that deployed PCS to SEA were located at Bien Hoa and Da Nang. Upon arrival at Bien Hoa the 10,000 pounds of equipment that was moved with the Detachment was unloaded in a mud hole at the base of the control tower. Action was taken to obtain a tent as a storage area. No billets were available for the 36 enlisted personnel, nor were any

maintenance facilities available. When an 18-man hut was finally assigned there were no lockers or clothes racks available. Two 25 x 50 foot huts were built, mostly with self help, to use as administrative, maintenance and supply facilities. As the area assigned was a mud hole during the rainy season, action was taken to lay in crushed rocks, sidewalks and to seed the remaining area. This was all accomplished on a self help basis.⁶

Conditions at Da Nang were even worse due to an extensive construction program underway, plus the fact that it was the most active airfield in the RVN. The result was that adequate facilities were not available for the LBR unit and nothing was programmed. The ARS requirements were made known and inserted into the programmed expansion of Da Nang; however, it would be early 1965 before suitable facilities could be expected.⁷

As stated by the Commander, PARC, after he had visited each of the ARS detachments in SEA during August and September of 1964:⁸

. . . . Generally, the facilities made available for our use are inadequate, but are the best available at the strict austere bases. Through initiative, improvising, and base assistance, facilities are being improved but will never reach the point where they can be considered plush.

b. LOGISTICS:

Some of the problems associated with logistical support had their

origin back in October 1961 when ARS first took over the LBR program and HH-43 aircraft. ARS anticipated gaining three to four HH-43B's per month from the factory replacing the SH-21B's and the H/SH-19B helicopter.⁹ Since receipt of the HH-43B the NORS rates exceeded the MATS/USAF standard. The major contributing factor was the lack of dynamic components, i.e., blades, shafts and housings and transmissions. Shortage of these items was caused by lapse of HH-43B overhaul contracts, failure of overhaul contractors to meet production schedules, and inadequate procurement of certain HH-43B spares to support the world-wide dispersment of this helicopter.¹⁰

ARS helicopters had never been listed in the Wartime Guidance and Requirements Documents (short titles WG and WR, respectively). As a result, war readiness materiel had never been procured and prepositioned in support of ARS helicopters. The mobility kits used for helicopters were designated as Mission Support Kits (MSK). Due to the logistical management concept of administering MSK's, assets were obtained from existing AFLC/ Base Operating Stocks. Under the MSK concept, an additive buy of spares was not generated.¹¹

In mid 1964, ARS assigned tasks in SEA were intensified to the extent that unprogrammed commitments were met with the deployment of CONUS LBR detachments. Mission Support Kits were deployed with the

first three LBR units to provide initial support. Subsequent units deployed were provided support from home base stocks. Logistical support in the Southeast Asia area generally had been adequate; however, there was no logistical planning action to provide immediate supply support in the event of intensified wartime activity.¹²

Due to the austere buy program, which was enforced within the Department of Defense, items were generally available to satisfy NORS conditions only. The rate of production never exceeded the rate of demand to the extent that base stockage was possible, except for high priority requirements. Through special management and close coordination with the support system managers, limited quantities of dynamic components have been positioned in Southeast Asia. With the escalation of activity in Southeast Asia, excessive transportation delays were experienced worldwide. Rapid return of reparables to the CONUS overhaul facility was required to meet day-to-day peacetime requirements. Increased traffic in the Pacific area prolonged the processing, repair and return of items to serviceable condition.¹³

It was subsequently proposed that immediate action be initiated by the Air Force Logistics Command (AFLC) to procure a sufficient quantity of HH-43B/F dynamic components to support base stockage at all overseas operating locations. Quantitative buy should consider increased flying hour

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programs projected for ARS units in the Southeast Asia areas and that transportation delays in the Pacific area would continue for some period of time. ¹⁴

The paramount problem in deploying the initial TDY Det Provisional Three force to Thailand was the apparent lack of planning and coordinated actions between 2d AD, PACAF and PARC. PACAF OPORD 116-64 tasked 13th Air Force to provide the necessary housekeeping and station sets at the operating location. The 2d AD staff understood that the LBR unit could deploy to a "bare strip" and be self sufficient. PARC and PACAF thought that 2d AD knew the manning and capability of ARS and expected 2d AD to furnish logistical support. Apparently, the necessary planning and coordination was never accomplished prior to the actual move. ¹⁵

The combat modification of HH-43F's created additional logistics support problems which were not expected in the modified HH-43B helicopter with T53L-1B engine. These outstanding problems were: special actions required immediately to procure spare T53L-11A engines, spare parts, peculiar Aerospace Ground Equipment (AGE), etc., applicable to the T53L-11A engine and modified airframe. Limiting factors: CSAF Confidential message ARORZCS 98562 authorized diversion of six T53L-11A engines from the Military Aid Program (MAP) for installation on ARS HH-43F aircraft. However, no spare engines or engine spare parts had been diverted

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to support these six installed engines. Also, ARS had no official knowledge of spares being provisioned or procured to support the airframe items peculiar to the RVN modified aircraft. Normal lead time for delivery of spares, AGE and technical data was three months administrative and nine months production for a total of twelve months. Consequently, maintainability of ARS modified aircraft in RVN by 23 October 1964 was extremely limited due to the non-availability of spare engines, engine spare parts, engine AGE, AGE peculiar to the modified airframes, spares peculiar to airframe and technical data.¹⁶

Several problems were encountered during this early period of operations which could be expected considering the rapid buildup of U. S. forces in the theater. It was extremely difficult to establish adequate supply lines from the CONUS to SEA and as a result helicopter units experienced excessive NORS/NORM and OR rates (Not Operationally Ready - Supply/Not Operationally Ready - Maintenance/and Operationally Ready). These rates for the HH-43B's based in Thailand are shown on Tab C, page 36 of this document, while the rates for the HH-43B's/F's based in the RVN are reflected on Tab D, page 39. Some of the problems that had the greatest impact on the NORS/NORM and OR rates are enumerated below:

The HH-43's did not have an extensive mobility capability.

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They were being supported from six mission support kits worldwide. The kits were small and not capable of supporting large force buildups like that experienced in SEA.

All spares were obtained through normal requisition channels which required considerable time in the pipeline.

Inadequate provisioning and long lead times. The spare parts back-up was not geared to support LBR detachments operating in tropical conditions and sustaining combat damage.

One specific item that contributed greatly to the NORS rate was the HH-43B/F rotor blade. The temperature and humidity required the replacement of an abnormal number of blades; and, for a period, it was necessary to ground them during rain storms because of resultant damage.

Although inadequate provisioning, long lead times, rotor blades, etc., were for the most part responsible for high NORS/NORM rates and low in-commission status an aggressive preventive maintenance program with a "can do" attitude did much toward improving a detachment's operational "lot in life." The Korat Detachment Commander during 1964 stated:¹⁷

The climate at this base works against the rotor blades. High temperatures and heavy rain contribute materially to rotor blade deterioration, but we found

that an aggressive preventive maintenance program stopped minor problems from developing into major ones and that judicious use of all materials at hand such as wax, balloon cloth and dope, and plain soap and water allowed us to lick the problem. We had only one blade failure, an Emergency Unsatisfactory Report (EUR) and Operational Hazard Report (OHR) were submitted through channels and one set of blades was changed for time expiration. . . .

With those items that the Korat detachment brought from the CONUS and those requisitioned from and provided by Det 3, PARC, they were able to accomplish their maintenance in a highly satisfactory manner. Time change items were received on schedule and the major area where the detachment was at a serious disadvantage was in receiving hi-value, critical items which were replaced on a need basis. This unit was NORS-G for a considerable period of time for a transmission and this one piece of equipment, beyond all others, was primarily responsible for their NORS rate.¹⁸

While the NORS rate was high and the OR rate was thus lower than the Korat detachment would have liked, the quality and quantity of maintenance performed was beyond reproach. Time and again they used initiative and imagination and plain hard work to keep a helicopter ready to fly wherever and whenever it was needed. An engine change completed in six hours, a shaft and housing cannibalized and reinstalled and the helicopter flown in eight hours reflected mission awareness and technical capability of the highest degree.¹⁹

All detachments did not fair as well as the unit at Korat as indicated by the following statement from an officer stationed at NKP during 1964:²⁰

Maintenance of the H-43's presented numerous problems and our OR rate was far from satisfactory. Our main area of concern was blades. There were no hangar facilities and the H-43's remained on the ramp during severe thunderstorms, heavy monsoon rains and blistering afternoon sun. . . . as I remember, we changed 17 sets of blades due to weather damage (moisture) during the period from 17 June 64 to the end of November 64. . . .

Numerous helicopters were damaged or destroyed by enemy actions which further created excessive NORS downtime. For example, at 0200 hours on 1 November 1964 the Viet Cong (VC) began a mortar attack on Bien Hoa and all five HH-43's were damaged. This included the three TDY HH-43B's and the two newly arrived HH-43F's.²¹

The combat situation introduced an unconventional logistical support procedure for new/modified aircraft and systems deployed to SEA. To support this situation, desirable timetables established for conversion to a new/modified weapons system were ignored, causing implementation of shortcuts which were not compatible with existing Air Force procedures. ARS headquarters objected to these unconventional logistical support procedures and recommended compliance with applicable directives to eliminate the element of risk connected with the supplying of new and/or modified systems at the end of the world's longest pipeline.

c. WEATHER:

The fact that in all of the reams of documentation researched on behalf of the ARRS Corona Harvest effort, there was a marked absence of any references to support provided by weather facilities, would be indicative that support in this area was adequate. LBR detachments were generally collocated with tactical forces and utilized the same Air Weather Service (AWS) facilities provided for these forces.

It should be noted that weather was normally not a consideration in the decision to launch a SAR mission. The importance placed on the rescue mission was such that a rescue effort was usually made regardless of existing or forecast weather conditions. Weather was a determinant in the final decision to attempt a pick up. This decision had to be made on-scene and prior to moving directly over the survivor so as not to divulge his position in the event he was not picked up.²² The importance of timely weather information to the SAR effort could not be overemphasized, as it had a direct bearing on ingress and egress routes as well as tactics employed in the pick up area.

d. INTELLIGENCE:

During the 1962 - 1964 time frame intelligence information was available to the JSARC from the intelligence agency located in the Air Operations Center at Tan Son Nhut. The intelligence section was jointly

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manned and operated approximately eight hours per day. Insufficient and inaccurate information was provided on VC movements as well as estimates of area security in those areas where aircraft were shot down. This was of prime importance during med-evac missions, where it was necessary to determine the security of the landing zone.²³

One ARS officer stationed at Tan Son Nhut during the latter part of 1964 classed the lack of intelligence information along with facilities and communications as the three major problem areas. He stated:²⁴

One of the first things we needed to know, upon notification of a bailout or downed aircraft, was that the area was secure for a recovery operation. The communications people compounded this problem also. USAF intelligence was just across the hall, they were of no help as they only collected information, not evaluate it. The U.S. Army (in the next office) could "find out" but it usually took longer than we could afford to wait. The ARVN or VNAF were the most talkative but usually unreliable. (These last few sentences are statement of fact/opinion only and are in no way intended to be critical of another operation.) During my tour, especially during 1964 and very early 1965, the recoveries were made without absolute (or even tentative) knowledge of the security of the area. In a no front line fluid type war like Vietnam, rescue recovery must be made fast and get out fast. On the scene back-up coverage for the rescue forces is essential. The best term I know is "A Team Operation."

ARS was tasked in the USAF Wartime Guidance/MATS Wartime Plans Short Range (WPS) to train and equip combat ready search and rescue units for recovery of tactical aircrews downed in hostile territory. From

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1958 until March 1965 combat aircrew recovery was not an assigned task and the integral intelligence staff function was dropped from ARS headquarters and subordinate units. Air Rescue Service had no intelligence personnel assigned although the combat aircrew recovery mission was being prosecuted daily in SEA. Tactical intelligence was provided to the combat recovery crews by 2d AD; however, during this time period ARS headquarters had no means to evaluate quantitatively or qualitatively the product being provided.²⁵

Since actions were being taken to build up the recovery forces to meet the combat aircrew recovery mission, ARS geared itself to the task not only in terms of the situation in SEA but also for other operational contingencies in any part of the world. To this end the requirement for an intelligence data base and a means of updating the data to provide current intelligence on a daily basis was vital to successful mission accomplishment.²⁶

ARS requested that MATS headquarters take action to conduct an on-the-spot survey of ACR units in SEA to determine the adequacy of intelligence support. Units at Tan Son Nhut, NKP, Da Nang and Udorn were to be surveyed. The primary concern was a system in-being that would provide the best current information to be available and briefed to ARS aircrews on a daily basis, or immediately prior to each mission. The survey was requested not as a reflection on the intelligence support that was being provided but as a means of establishing future intelligence support

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requirements and definition of the intelligence function in ARS as related to the combat aircrew recovery mission.²⁷

e. COMMUNICATIONS:

From the beginning of ARS involvement in SEA on 10 January 1962 and for the remainder of the 62-64 time period timely SAR efforts were hampered by poor communications, both in the air and on the ground. The lack of a system of filing flight plans and passenger lists coupled with the lack of an adequate flight following capability compounded an already serious problem.²⁸

The Commander of the Korat detachment in 1964 had this to say:²⁹

. . . . When we first started operating, our operational controlling agency was Detachment 3 PARC located in a small broom closet at 2d Air Division, Saigon. All reports were transmitted via Single Side Band (SSB) to Saigon and there was a long time delay between time of occurrence and the execution of rescue forces. The Rescue Crew Commander was entirely on his own most of the time especially if atmospheric conditions were bad for communications. This was bad in view of the sensitive areas we were operating over. . . .

Since the detachment at NKP was so remote from the operational command in Saigon, communications were a continuing problem for this unit. Their only means of communication was via single side band radio.³⁰

From the Saigon end land lines and radio sets were in critical supply resulting

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in overloading and long delays in traffic.³¹ The Takhli Detachment had adequate communications, since there was a small TDY F-100 unit already there and an adequate operations center had already been established. This could have been a problem area since communications for the base itself were very poor.³²

The lack of adequate communications not only plagued personnel responsible for launching the SAR effort, but the rescue crews and the downed crewman as well. As one pilot stated:³³

. . . . Radios, radios, radios the key to location, identification and recovery were always bad news. First off we didn't have enough of the radios on hand. Often radios had to be shared, i. e. one or two per transport aircraft, non flying crewmembers giving theirs to flying pilots, no method of testing battery strength and generally unreliable operation. There were many many instances where pilots could not get radio contact with their search/rescue aircraft. Radios were hands down the most significant problem.
. . .

With respect to avionics and the HH-43 little or no problems were encountered for the first few months. The main reason was that it was simply configured with basic avionics systems. The lack of an FM capability did pose a problem, particularly where Army aircraft were involved. The modified HH-43F generated a temporary problem in the procurement of additional spares and test equipment to support the new avionics systems.

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f. AIR REFUELING: Not applicable to this helicopter.

g. RESEARCH AND DEVELOPMENT: The full spectrum of Research and Development as it pertained to ARS equipment was addressed in the ARRS Corona Harvest Volume I, USAF SAR in SEA, Section V.

h. OTHER: None.

2. ADDITIONAL CONSIDERATIONS: The helicopter airframe and engine spare parts buy was not geared to support the rapid buildup of ARS forces in SEA. To offset this lack of supply support, cannibalization became a way of life resulting in an excessive loss of maintenance manhours. The lack of maintenance facilities diverted maintenance manhours to building programs which also diluted the maintenance capability.

3. SUMMARIZE LESSONS LEARNED:

a. Adequate facilities were rarely available for SAR forces upon arrival to a base.

The lack of adequate facilities was a major problem throughout 1962-64. Facilities ran the gamut from totally inadequate to nonexistent and required many manhours to be expended on self-help projects. This necessarily reduced productive manhours in other areas such as maintenance, administration, etc.

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On occasion lack of support was the result of the apparent lack of planning and coordinated actions between 2d AD, PACAF and PARC. During one deployment PACAF tasked 13th AF to provide the necessary housekeeping and station sets at the operating location. The 2d AD staff understood that the LBR unit could deploy to a "bare strip" and be self-sufficient. PARC and PACAF thought that 2d AD knew the manning and capability of ARS and expected 2d AD to furnish logistical support.³⁴

- b. Logistical support for ARS helicopters deteriorated as activity intensified.

Logistical support in SEA had generally been adequate until mid 1964 when ARS assigned tasks were intensified to the extent that unprogrammed commitments were met with the deployment of CONUS detachments. Mission Support Kits were deployed with the first three LBR units to provide initial support, and subsequent units were provided support from home base stocks. Due to the logistical management concept of administering MSKs, assets were obtained from existing AFLC or Base Operating Stocks. Under the MSK concept, an additive buy of spares was not generated. Also, ARS helicopters had never been listed in the Wartime Guidance and Requirements

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Documents. As a result, war readiness material had never been procured and positioned in support of ARS helicopters.³⁵ The ensuing requirement to obtain all spares through normal requisition channels consumed considerable time due to the long lines of communication. Mission capability was impaired and heavier workloads were imposed on each unit as more extensive preventive maintenance programs were demanded.

- c. Current intelligence information was vital to efficient combat SAR operations.

Deployment of SAR forces without knowledge of area security did not permit the rapid entry and exit required for successful recovery operations. The lack of fire support in unsterilized areas placed the recovery crew and the downed aircrew members in jeopardy.

- d. Communications was the weakest link in the ACR chain.

The most crucial element in any recovery operation was communications. A reliable means of communication between the controlling agency and the on-scene SAR force and between the recovery aircrew and the downed aircrew wasn't always

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available. As one pilot stated ". . . . Radios, radios, radios
the key to location, identification and recovery were always
bad news."³⁶

4. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs
a through d, generally support, in the same alphabetical order, the lessons
learned that have been listed above:

a. That portable housekeeping and living facilities be deployed with
SAR forces unless a host unit confirms the availability of equal or better
facilities.

Hardships and inconveniences are inevitable by-products of
war; however, those that can be avoided through more detailed
planning and better preparation should not be overlooked.

b. That any ARS aircraft subject to deployment and wartime utilization
be listed in Wartime Guidance and Requirements Documents.

The possibility that a contingency operation might escalate
into a broader conflict is ever present. If tactical activities
increase, it logically follows that SAR requirements will
increase; therefore, recovery and tactical force logistical

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requirements must be equally considered.

- c. That vital intelligence information be passed to SAR forces along with the request for SAR task force support.

This would eliminate time lost attempting to obtain such information. A daily intelligence analysis, covering the general operating area, lacked the timely, mission oriented intelligence information needed to determine mission route and area conditions prevailing or to be anticipated. This data must be compiled in a form conducive to transmission via telephone and radio.

- d. That special emphasis be placed on providing portable communications equipment that would link SAR coordination agencies with on-scene SAR aircraft. Also, all aircrews operating in the combat zone must be equipped to communicate with SAR aircraft during recovery operations.

Development of communications equipment for aircraft and aircrew members should be a tri-service project, and evaluation of new equipment should utilize SAR aircraft to insure compatibility. Upon acceptance of new equipment, the immediate modification of SAR aircraft must follow when necessary.

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SUPPORT ANALYSIS

1962-1964

FOOTNOTES

1. Ltr, Det 8 AARRC (Capt Gordon L. Hall) to Hq ARRS (ARXDC), Subj: Resume of SEA Tour, 21 Oct 1968, p. 1.
2. Ltr, Hq MAC (MAOCX/Col Mask/3388) to Hq ARRS (ARXDC), Subj: Corona Harvest Study (U) (ARXDC Ltr, 3 Oct 68), 27 Nov 1968, p. 2.
3. Ltr, Capt Philip S. Prince (Det 10, EARC) to Comdr EARC, Subj: End of Tour Report, 18 January 1965, p. 4.
4. Ibid., p. 5.
5. Ltr, Maj Ronald L. Haglund to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, undated, pp. 1-2.
6. Ltr, Hq ARRS (ARMMTH/CMSgt Blier) to Hq ARRS (ARMLG/Capt Gunn), Subj: Input to Corona Harvest, 21 Jan 1969, p. 1.
7. Ltr, Comdr PARC to Comdr ARS, 10 Nov 1964, p. 1.
8. Ltr, Comdr PARC to Comdr ARS, Subj: Staff Visit, 18 September 1964, p. 1.
9. Ltr, Hq ARS (ARCCO) to Comdr MATS, Subj: Command Monthly Letter, 31 October 1961, p. 1.
10. Ltr, Hq ARS (ARXDC) to MATS (MAODC), Subj: Talking Papers, SEA Actions w/10 Attachments, 7 August 1965, Attachment 8.
11. Ibid., Attachment 7.
12. Ibid.
13. Ibid., Attachment 8.

(SUPPORT ANALYSIS Footnotes - continued)

14. Ibid.
15. Ltr, Lt Col Hartley to Comdr ARS. Subj: Report of Conditions Existing in SEA, undated, Attachment 1, p. 1.
16. Msg, Hq ARS (ARODC) 293-G, 30 July 1964.
17. Prince, 18 Jan 1965, op. cit., p. 6.
18. Ibid.
19. Ibid.
20. Ltr, Capt Donald D. Metzinger to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, 6 Dec 1968, p. 1.
21. Ltr, Lt Col Archie R. Taylor to Hq ARRS (ARXDC/Lt Col Crozier/5871), Subj: Corona Harvest Study, 15 Oct 1968, p. 2.
22. Air University Designated Study No. 7, Vol. VII, Rescue, 15 June 1968, Section VI, p. 37.
23. Ltr, Major John R. Cox to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, 12 November 1968, pp. 2, 4.
24. Ltr, Det 4 AARRC (Major Clifford E. Brandon) to Hq ARRS (ARXLR), Subj: Corona Harvest Study, 8 Nov 1968, pp. 1-2.
25. Msg, Hq ARRS (ARXDC) 50374 Aug 65, Subj: Intelligence Survey Air Rescue Service Combat Aircrew Recovery Forces in SEA, p. 1.
26. Ibid., pp. 1-2.
27. Ibid., p. 2.
28. Ltr, Lt Col Albert R. McNamee to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, 6 Nov 1968, pp. 1, 3.
29. Ltr, Major James Chubner, Subj: Corona Harvest Study, undated, p. 1.
30. Metzinger, 6 December 1968, op. cit., p. 1.

(SUPPORT ANALYSIS Footnotes - continued)

31. Brandon, 8 Nov 68, op. cit., p. 1.
32. Ltr, Det 6 EARRC (Capt Walter A. Malkiewicz) to ARXDC (Lt Col Crozier), 15 October 1968, p. 1.
33. Cox, 12 November 1968, op. cit., p. 6.
34. Hartley, undated, op. cit., p. 1
35. Ltr, Hq ARS (ARXDC) to MATS (MAODC), 7 August 1965, op. cit., Atch 7.
36. Cox, 12 November 1968, op. cit., p. 6.

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PLANS, CONCEPTS AND DOCTRINE ANALYSIS

1962-1964

1. WERE PLANS AVAILABLE?

With one exception, which was the creation of the 8th Air Rescue Group in 1954, USAF policy had been that ARS be manned and equipped for the combat rescue mission after initiation of hostile activity. This policy resulted in high cost crash programs to equip and man combat aircrew recovery units and in the use of inadequate resources with a high degree of risk in the interim period.¹ This policy, coupled with the fact that ARS did not have an official wartime mission, certainly impacted on the interest, time and effort devoted to preparing effective combat plans.

Even though ARS, prior to the SEA force buildup in 1964, was tasked to provide combat aircrew recovery in a myriad of war and contingency plans, this could not be interpreted to mean that ARS had the capability to respond to these plans.² In the European Command (EUCOM) and Pacific Command alone, ARS was tasked in 88 separate contingency plans, most of which required a combat capable rescue force. Many commanders and staff officers may still have had memories of rescue in Korea in the back of their minds and subconsciously believed that ARS could rapidly muster a combat-equipped rescue force to do the job

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in the same manner. Unfortunately they failed to consider that when the tactical forces were built up to cope with the limited war problem, ARS forces were not similarly developed.³ The Air Rescue Service inability to respond to these plans can best be exemplified by the fact that after two years of USAF operations in South Vietnam only a token force of six small helicopters could be provided to prosecute the vital SEA mission.⁴

There was and still is a valid comparison to Rescue in SEA and the U.S. space program. If one of the major sub-systems of the Gemini capsule had failed, thus preventing reentry, the nation would have had a step by step television and radio description of how the uninjured and unharmed astronauts were dying without hope of rescue. When the public realized that no action whatsoever could be taken to attempt rescue, the pressures on the administration would, at a minimum, result in reappraisal of space goals: or an indefinite delay, reorganization, or possibly cancellation of planned space programs. In early Mercury shots, a failure might have been accepted. Today, a failure which would result in marooning U.S. astronauts in space would represent a national delinquency which could produce unpleasant reactions, not only by the U.S. public, but by our allies and other uncommitted countries as well. . . . We as a nation, must ask ourselves the question -- do we really believe that our national ethics, traditions and humanitarian values end at the end of space? ^{edge} 5

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This rationale with respect to rescue in space is presented only for the purpose of highlighting the lack of high level planning and preparation for the total rescue mission, be it peacetime, space, or Southeast Asia. The American public could no more buy the lack of planning and preparation for rescue in SEA than they could for the "man in space" if they had been made aware of the fact that all this country could muster was a small force of totally inadequate helicopters to perform the LBR/ACR mission in Southeast Asia.

Headquarters ARS was completely aware of their limited response capability and initiated planning to establish a more flexible organization that could provide an improved capability to respond to world-wide requirements. The situation vis a vis operational planning was summed up by the Commander, ARS, as of the end of June 1963 as follows: ⁶

We sent a message to major air commands on their requirements for ARS support. . . . Overall requirements . . . have been steadily increasing and, concurrently, new and demanding responsibilities have been levied on us. Also many times rescue/recovery support requirements have been levied . . . with little or no warning and/or simultaneously with others. The commands were asked to provide . . . data concerning their requirements to assist us in planning and programming to ensure our maximum capability to respond to their needs. The responses received tended to verify a continuing high level of requirement for support.

The initial deployment of TDY LBR forces to Southeast Asia was to

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be accomplished in accordance with Air Rescue Service Operations Plan 510. The Air Force philosophy that the ARS Local Base Rescue program possessed the potential capability to support contingency operations resulted in the publication of this plan.⁷ It was designed to provide USAF with a rapid reaction helicopter force to meet an infinite variety of contingencies, on a world-wide basis.⁸

The initial deployment of PCS LBR forces to Southeast Asia was made in accordance with Programming Plan 563. In November of 1963 ARS strongly recommended that a combat aircrew recovery force be established in the Republic of Vietnam. Actions that followed by Headquarters Pacific Air Force, Headquarters 13th AF and 2d AD, prompted ARS to conduct a study on the movement of such a force to RVN. The study was favorably considered by Pacific Air Force and Headquarters MATS and processed to HQ USAF. As a result of this study and the efforts on the part of the Commander in Chief Pacific Air Forces (CINCPACAF) and CINCPAC it was recommended to the Joint Chiefs of Staff (JCS) that this force be provided. The JCS directed Air Force to prepare such an organization for deployment to RVN. ARS prepared a Programming Plan (563) to implement the ARS portion of the move, when Air Force provided final approval.⁹

Documentation available from 1964 indicates that considerable ARS

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"homework" was done with respect to establishing a logistic support concept for HH-43B helicopters. On 10 April 1964, Headquarters ARS dispatched a message to PACAF, info to AFLC, PARC, 2d AD, 13th AF and others proposing that HH-43B spares located at Port Moresby, New Guinea and Andersen AFB, Guam be transferred to AFB supply account number 5269 at Tan Son Nhut. HH-43B spares at Itazuke would be utilized to assemble a forward supply point spares kit to be maintained at one operating location. This kit would contain basically the same components as listed in the MSK's possessed by certain ARS units, but would be supplemented with certain dynamic components such as blades, hubs, transmissions and items peculiar to the modified helicopters. Should it be necessary to transfer this spares kit and associated AGE from Itazuke prior to deployment of the helicopters to SEA, it was recommended that the 36th ARSq at Tachikawa become the staging area for spares, AGE and equipment for one RVN detachment. HH-43B spares at Westover AFB would be utilized to assemble a second forward supply point spares kit and Westover or Stead AFB, Nevada would become the staging area for the other RVN detachment.¹⁰

It was recognized at that point in time that a quantity of spares greater than the MSK contents would be required at the operating location and that the assembly of these spares, for the lack of a better name, be designated as "forward supply point" spares to be resupplied out of Clark AB.

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PACAF was requested to provide the following facts in order that Headquarters ARS could develop a realistic logistical annex to the proposed programming plan. Existing Air Force activities in the RVN were supported by a PACAF procedure; therefore, it was logical to assume that ARS units would be similarly supported. It was in this area that ARS desired to obtain as much information as possible about the following general areas:¹¹

What communications channels would be used to advise Clark AB of resupply requirements?

Was there a designated section within the Clark AB area to monitor and expedite delivery of items to the deployment location and would additional manpower be required in support of ARS requirements?

What local procedures were in effect for the return of reparable assets from the deployment site and would these reparable assets receive priority repair within the field maintenance complex at Clark AB?

Had a project number (three digit code) been assigned to support Air Force activities operating from the RVN?

Were the forces in RVN being supported through Speed Through Air Resupply (STAR) procedures?

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Had USAF authorized the use of the 1-X precedence rating for support of forces in RVN? This precedence rating had a direct relationship to the supply priority that ARS LBR units would be entitled to use.

Which agency in 2d AD or Clark AB monitored the NORS conditions in RVN? Headquarters ARS would require daily information on the NORS status.

What storage facilities were available at each deployment site?

What quarters and messing facilities were available?

Would it be necessary for LBR units to ship Unit Support Equipment (USE) such as desks, chairs, cabinets, etc., to the deployment site? If so, the movement directive of the unit must specifically authorize this action as this type equipment belonged to the host base Base Equipment Management Office (BEMO) rather than to the LBR unit.

This then in brief summary reflects that there were two plans available prior to the ARS buildup in SEA, one an Operations Plan and the other a Programming Plan. The OPLAN was a general plan and did not address Southeast Asia per se, but was supposed to cover any and all

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contingencies. The Programming Plan was written specifically for the deployment of six HH-43F's to Bien Hoa and Da Nang. In addition operations orders were used to deploy forces and to insure host base support.

2. WHO WROTE THEM? The two plans utilized to deploy ARS forces to SEA during 1964 were prepared by Headquarters ARS. The OPLAN 510 was used by PACAF and PARC as a guide in the preparation of PACAF OPORD 116-64, which was used to deploy the first detachment to NKP. This OPORD tasked 2d AD to provide host base support and held 13th AF responsible for necessary housekeeping and station sets at the operating location.¹² There were some references in 1964 documentation that indicated there was a 2d AD OPORD which addressed LBR detachments; however, this OPORD could not be located.

3. WHEN WERE THEY WRITTEN?

The original ARS OPLAN 510 was published 22 July 1963 and amended 31 October 1964. The original plan was not available throughout the preparation of this document; however, a copy of the 1964 version was utilized.¹³ Personnel who were familiar with both versions of the plan indicated there were no major changes in the second edition. It should be noted that the first detachment deployed to SEA in 1964 moved in accordance with PACAF OPORD 116-64, which was prepared in June 1964 and was based on the original 510 Plan.

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Headquarters ARS Programming Plan 563 was published in April 1964 and was amended four times prior to its utilization to deploy the first two HH-43F detachments to SEA.¹⁴

4. WERE THEY ADEQUATE?

ARS OPLAN 510 was adequate for the purpose for which it was primarily intended, predominantly that of peacetime deployments for natural disasters, assistance to local and defense agencies, national SAR missions, etc. Although the plan did identify rescue/recovery support for deployed combat units as one of the contingencies which Local Base Rescue Contingency Force (LBRCF) helicopter units could be deployed to support¹⁵ it certainly, as written in 1963, could not be considered adequate for a Vietnam type contingency.

The problems encountered by the first LBR detachment that deployed under ARS OPLAN 510/PACAF OPORD 116-64 were predominantly facilities and logistic support. Although the length of an annex to a plan cannot be related to problems encountered or lack thereof, it should be noted that the Logistics Annex to 510 was slightly over two pages long whereas the Information Annex was 4 1/2 pages, which exactly equalled the page count for the Basic Plan.¹⁶ This in itself infers a strong peacetime connotation.

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The concept to utilize ARS TDY forces to meet contingency situations was demonstrated in the ARS response to the Cuban Crisis in 1962 and the hostilities in Southeast Asia in 1964-65. Many problems were encountered in exercising the ARS OPLAN 510 in SEA because of the deviations from the basic plan that were directed by USAF.¹⁷ These deficiencies were thoroughly addressed in ARRS Corona Harvest Volume I, USAF SAR in SEA, dated 31 January 1969, pages 55 through 78, and other than for the purposes of reemphasis, reiteration would serve no useful purpose.

To preclude redundancy then, let's not massage the Southeast Asia end of the problem again, but instead turn our attention to 510 deficiencies as they impacted upon CONUS organizations that were losing LBR units to SEA.

This can perhaps best be cited by airing the views of the Central Air Rescue Center Commander who in a letter to the ARS Commander on 31 August 1964 stated:

In compliance with your request during your 13 August visit, a critique is submitted on the recent LBR deployment under the 510 Plan. Everybody hates a Monday morning quarterback; but, I will have to accept the onus, as I do have criticisms. However, they are intended to be constructive not recriminatory, as they can lead to improvements, in my opinion. I will discuss deficiencies, as I see them, by command level, starting at the top.

This he did starting with USAF where he said, "We are all aware that USAF deviated from the 510 Plan." He expressed reservations concerning the USAF approach and enumerated the specific head winds that this approach imposed. The main bone of contention was with the detachments selected for deployment (priorities for LBR detachments rest with USAF). The detachments selected were the worst choices under the 510 Plan and concept, in that one had several personnel who were ineligible to go, or whom it was undesirable to send; while the other had an unfavorable helicopter time change component posture, which required substitution of both helicopters. Fortunately, the nearest detachment and one in the general area, had two operationally ready high time aircraft. Had they not, the aircraft problem would have been further complicated with resultant increased delay. The only valid consideration favoring the movement of these two detachments was that both had a historically low mission rate. Ironically, on 17 August one of the bases that had this historically low mission rate had an F-101 crash on takeoff. The radar observer escaped, but the pilot was burned to death. Indications were that this was a classic set up for an LBR save; and, that the probability was high that the pilot would have been saved -- had the LBR unit been there. ¹⁹

As the Commander, CARC, stated: ²⁰

. . . . Back to the point, if low mission rate is the criteria, it would be better to pick our detachments for

deployment according to capability posture at the time, and to use resources of the low mission units at bases from which deployment was executed. We, in fact, had to do this anyway in one out of the two cases (Det 2 aircraft to Det 3, and residual personnel resources from Det 1 to others).

Constructive criticism was rendered not only toward USAF but to Headquarters ARS as well. Frequently critical information was delayed beyond conceivable security restrictions, sometimes it had to be dug out from the Central Air Rescue Center end. Confusing instructions, even conflicting, were received. In one instance, at least, instructions tended far more toward the philosophy that "they will know what we mean," rather than "if we don't make it clear, somebody will misinterpret." More specifically with respect to the transmittal of instructions that the CARC Rescue Control Center Duty Controller received from the ARS Command Post, via telecon, to the effect that both dets were to deploy and to start preparing, including aircraft teardown. Inasmuch as 510 called for full UMD manning, previously alerted augmentation personnel were launched also, as soon as transportation arrangements could be completed. Some one and a half hours later further telecon instructions were received from Headquarters ARS through personnel channels that only one detachment was to go, and one was to remain on stand by. Further conversation resulted in CARC being given a list of personnel requirements by Air Force Specialty Code (AFSC) which was supposed to clarify the

deployment composition and configuration. It did not, as there were differences from what would be required for a normal 510 Plan deployment of two detachments as entities, but no explanation as to what the deviations meant.²¹

Upon request for more informative clarification, it was made clear that one detachment was to split, augmenting one of CARC's with one of Western Air Rescue Center's and outlining the personnel augmentation requirements for both detachments. By this time, the augmentation airlift and personnel had been committed. One more point concerning augmentees; initially CARC was not informed that this deployment took precedence over the 563 Plan. Consequently CARC went further afield for augmentees than was necessary.²²

Confusion generated with respect to the publication of orders. Destinations could not be given via telecon. Section III of the movement order contained the last of the essential information with one exception. Section III arrived at CARC ten hours after Section I and two hours and forty-five minutes after the deploying detachment arrived at Travis. Section III directed placing deploying personnel on TDY for 179 days, but did not contain funding information (the exception mentioned above). Amendment I stated that funding information was contained in an All Major Command (ALMAJCOM) message which CARC never received.²³

The Commander, CARC, as a result of the deployment under the
510 Plan recommended:²⁴

That ARS OPLAN 510 be amended to include a telephone information transmittal check list, with delineation of responsibility for the immediate transmission of critical information.

That any unusual or deviating instructions be paid special attention and clarified at once, as in the case of funding

That transmittal of the movement order be expedited; or, that short high priority frag order(s) be sent at once, giving the Essential Elements of Information (EEI) of the deployment, to be confirmed by the formal movement order.

That MATS be requested to recommend to USAF that future deployments be executed in accordance with ARS OPLAN 510, with explanation of how deviations can handicap both rapidity and quality of response.

It should suffice to say that ARS OPLAN 510 was not considered adequate for deployment of LBR units to SEA. As evidenced by the comments of the CARC Commander there were inherent deficiencies. The PARC Commander outlined that it was his impression that the CONUS LBR units were not properly prepared or equipped to implement the ARS 510 Plan under emergency conditions.²⁵ The ARS Commander also indicated that the 510 Plan had contributed to the deployment problem and Headquarters USAF did not intend to use the plan for tactical situations.²⁶

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ARS Programming Plan 563 recognized the problems in organizing, moving and activating new units for SEA. It did not, however, resolve the problems experienced under the 510 deployment as evidenced by the lack of planning or preparation to provide facilities, office equipment, etc., at Bien Hoa and Da Nang.²⁷

Annex FOXTROT to the 563 Plan contained general guidelines for programming logistic action in support of the basic plan. The objective was to program staff action required to activate and expedite deployment of two helicopter detachments. One of the implementations required immediately upon receipt of this plan was that the PARC Commander would negotiate AFR 11-4 Host-Tenant Agreements for support of Det 4 at Bien Hoa and Det 5 at Da Nang.²⁸

The Logistics Annex tasked Hq ARS, DCS/Materiel to develop total requirements for office equipment, barracks furniture, day room furniture, individual field equipment, towing and general purpose vehicles, administrative and housekeeping supplies, related funds requirements; obtain required approvals for shipment of items from CONUS resources to each operating location; and position such items at Stead AFB for shipment prior to deployment of LBR personnel.²⁹

The responsibility for providing office furniture for the two PCS

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units was assumed by PACAF and passed to 13th AF for action. Although PACAF, 13th AF and 2d AD accepted responsibility for certain actions, these actions evidently became lost in the accelerated buildup of USAF forces in RVN. This was evident upon arrival at Bien Hoa where only folding chairs and lockers were available for issue, whereas at Da Nang absolutely no furniture was available which indicated a lack of planning, coordinating and negotiating for the support of these LBR units.

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These small units were dependent on the Host Base for support; therefore, it was essential that the planning, coordinating and negotiating for their support begin at the highest echelon and carry through to Base level. If the approved concepts and doctrines were followed throughout every chain of command, deficiencies encountered would have been eliminated.

To assure continuous combat aircrew recovery by helicopter in Vietnam, replacement for those attrited must be immediately available. Hq ARS recognized this need in Programming Plan 563, which met the USAF urgent requirement to deploy a force of combat aircrew recovery helicopters to RVN. The force attrition rate contained in the plan was estimated at 40% during the first twelve months; thus, the plan assumed a minimum of nine helicopters would be modified. Headquarters USAF directed only six HH-43B helicopters be modified to equip two permanent ACR detachments. The plan further recommended that this interim UE force be replaced with a squadron

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of triphibious, high speed, twin-turbine HH-3C's during June 1965. ³¹

5. WERE THEY USED?

It should be reiterated that the ARS OPLAN 510 was used as a guide in the preparation of the PACAF OPORD that moved the initial LBR detachment to SEA in 1964. The PACAF OPORD was used for this deployment in that this was an in-theater move from Naha to NKP. With respect to the TDY movement of LBR units from the CONUS to SEA the 510 Plan was used in preparing the Headquarters ARS OPORDS. Det 2 of Central Air Rescue Center located at Minot AFB, North Dakota was deployed to Da Nang in August 1964 via the OPLAN 510/ARS OPORD. Det 1 of CARC, located at Glasgow AFB, Montana was deployed to Bien Hoa using the same guidance and authority. These units were latter replaced by Det 4 and Det 5 which were deployed under ARS Programming Plan 563.

In summation, during the June-December 1964 period five LBR units were deployed to SEA, one under a PACAF OPORD, two under OPLAN 510/ARS OPORD and two under Programming Plan 563. OPLANS/OPORDS were used for subsequent TDY deployments while Programming Plans were used for PCS moves. The normal deployment sequence for administrative movements of LBR detachments involved CINCPAC's request for units, approval by the JCS, unit selection, alert and establishment of an initial readiness date, Office of Secretary of Defense (OSD) approval of the requirements, and JCS

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directive to deploy. Once the directive to deploy was received either a Programming Plan or an OPLAN/OPORD was prepared depending on whether it was a TDY or PCS move.³²

6. WERE THEY VALID (WHETHER USED OR NOT)?

Although it was the original opinion of USAF and Headquarters ARS that OPLAN 510 could be used for any contingency,³³ USAF subsequently directed that it be used only for non-tactical short term deployments. Contingencies involving short tactical situations such as a limited war, would process through normal JCS directed actions. This would include the proper programming of ARS resources through the approved planning cycle, i.e., PACAF to CINCPAC to JCS to HQ USAF.³⁴ This type of planning action was required to insure that adequate facilities, logistical support, etc., were programmed. As ARS OPLAN 510 was a general plan designed to support a variety of contingencies, specific requirements such as facilities or logistics for a specific contingency could not be identified nor programmed. This could only be accomplished once the contingency was specifically identified, to include geographical location, established or "bare base" concept and the environment in which the unit would be operating.

ARS Programming Plan 563 addressed the specifics that the 510 Plan could not identify. The main purpose of PP 563 was to deploy two LBR detachments PCS to SEA and have them operationally ready by 30 June 1964, or

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sooner if possible. It identified existing LBR detachments that would have to be inactivated to provide some of the basic resources essential to the prompt activation of these two new combat detachments and specified that they would be deployed to established bases. By virtue of being able to identify geographical location, theater command control and operational control structure and other essential elements of information the 563 Plan could address the full spectrum of support required and pinpoint responsibility.³⁵

The 510 Plan was designed for quick reaction which in itself would not normally permit orderly or timely identification of what support was required and who would be responsible for providing it. Certainly the 510 could have been amended or operations orders could have identified these specifics as they became known; however, for a plan designed to rapidly form and deploy LBR units one would expect much of this to be after the fact action.³⁶

7. WERE THEY IN AGREEMENT WITH:

a. EVENTS?

Certainly the ARS OPLAN 510 was not prepared to agree with the events of the times. As has been previously stated this plan was written to cover any and all contingencies and certainly at the time of preparation did not specifically have the Republic of Vietnam in mind. It, no doubt, in the mind of the author(s) would suffice for the general "run of the mill" peacetime deployment, i.e., natural disasters, etc. It would not, however, provide for

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a wartime contingency, even though rescue/recovery support for deployed combat units was listed in the plan as a possible reason for deployment. This line of thinking, if it did exist, was understandable due to the fact that ARS did not have a wartime mission clause at this point in time.

Documentation available for this period pretty clearly spelled out that ARS, along with others, was fairly convinced that the SAR "bread was buttered" on the National Aeronautics Space Administration (NASA) side, insofar as obtaining new or improved equipments. This statement, of course cannot be substantiated by other than the fact that rather high level briefings covering this time period hesitantly addressed the SEA problem, whereas considerable "words and music" were expended in the direction of the "space" program. In addition, opinions rather hesitantly rendered by personnel assigned to Headquarters ARS during this time frame tended to support this position. Needless to say, if ARS headquarters did elect NASA as their best means of equipment survival, it was quite understandable in light of past experience and efforts expended to obtain adequate equipments for valid search and recovery missions. As stated previously, ARS equipage for the combat aircrew recovery role normally had been an after the fact action which for the most part resulted in costly and inadequate interim equipment.

ARS Programming Plan 563 was, of course, prepared with only Vietnam in mind and as such did agree to some extent with the events of the time.

However, when one considers the fact that this plan hurriedly deployed six small combat configured helicopters to SEA, that most everyone agreed were inadequate for the combat role, then it must be questioned as to whether this action really agreed with the current happenings of the Vietnam conflict. USAF and other allied aircraft losses had reached a fairly high figure by June 1964, and to assume that this meager SAR effort would satisfy these ever increasing losses was certainly not realistic planning. However, the decision to provide HH-43B/F helicopters for the initial LBR/ACR mission in SEA could not be classified as normal staff planning but only as rapid reaction to a crash requirement. Certainly the low level planners were well aware that the HH-43, whether modified or not, was not an ideal first line combat SAR vehicle. If this was valid rationale, then again, as in Korea, the combat rescue mission was relegated to after the fact action. Decisions of this type not only inferred a rather lackadaisical approach to the recovery of the tactical forces initially committed to a Korean or Vietnam conflict, but also reflected apathy for the equipment environment provided the initial SAR forces.

b. CONCEPTS AND DOCTRINE ?

With respect to utilization of the HH-43B for the LBR mission, in SEA, certainly it was apropos for the Local Base Rescue concept. This, with the exception that there was a decided difference between an LBR mission at Podunk AFB, USA than there was with one at Da Nang AB, Vietnam. In

essence then, the only difference was the vehicle's capability to survive in a hostile environment which, of course, to the crew was a rather significant factor. To state then that the HH-43B was capable of prosecuting the LBR mission in SEA was no more realistic than to state that it was capable of accomplishing an ACR mission in a Surface-to-Air Missile (SAM) envelope. The fact that all of South Vietnam was generally accepted as a hostile environment certainly negated any connotation of "safe haven" areas in the RVN, even when operating within the traffic pattern of established RVN air bases.

Considering that ARS units designated as LBR detachments only, were by virtue of guerrilla warfare operating normally in a hostile environment plus prosecuting opportune ACR missions; their requirement for combat configured equipment was potentially as great as those units designated as ACR detachments. If this rationale was valid, nothing less than the combat configured HH-43F could be considered as acceptable for either the LBR or ACR combat mission.

The rationale and planning that deployed HH-43B/F helicopters to SEA in support of the initial professional SAR effort should not be graded as one of the better military decisions. The fact that both models of the HH-43 "racked" up a fairly impressive "save" record in SEA did not after the fact make it a suitable combat SAR vehicle. As ARS saves were not documented until December 1964 it would be impossible to determine whether an adequate

SAR vehicle would have resulted in a higher save rate. Available statistics for this period do state that a fair number of airmen were downed that were never recovered. The Contemporary Historical Evaluation of Combat Operations (CHECO) reports substantiated an almost complete lack of records with respect to unsuccessful SAR efforts. Documentation available within Headquarters ARS for the 1964 time frame supported the conclusion of the CHECO reports.

c. EACH OTHER? Although ARS OPLAN 510 and ARS Programming Plan 563 were both designed to move an LBR detachment from point "A" to point "B" they did not complement each other. However, they were not designed to agree with each other as the 510 Plan deployed TDY forces in support of any and all contingencies, whereas 563 dealt with a PCS move of two detachments from the CONUS to SEA.

d. INTER/INTRA SERVICE?

Little can be said about inter/intra service plans during this period, as very little information was available on the subject. During the June - December 1964 period all LBR/ACR detachments were deployed under the ARS OPLAN 510 or Programming Plan 563, with the exception of one that deployed under a PACAF OPORD. No doubt support requirements for these detachments were spelled out in supporting plans or OPORDS prepared by PACAF or 2d AD or both; whether they were spelled out in sufficient detail

could not be determined as none could be located.

The only indication of intra service plans and planning was found in a letter from the PARC Commander to the ARS Commander dated 13 August 1964. He indicated that as a member of the PACAF Battle Staff and having information available on the Air Order of Battle (AOB) he was able to notice the lack of SAR forces and detect the fallacious planning on the part of the CINCPAC staff. He pointed out that the erroneous conception of complete deployment forces could be attributed to a single procedure -- the retention of coordination, decision making and approval authority at the JCS - CINCPAC level. When the PARC Commander queried on the absence of SAR forces, even though they were properly included in the appropriate plan, the answer indicated that they had been overlooked by the CINCPAC staff.

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The ARS Commander in response to the above letter pointed out that in war planning the Zone of Interior (ZI) capability had to be programmed in the proper manner, which included the placing of these requirements in the appropriate contingency plans and obtaining JCS approval. He indicated that it behooved Rescue to get their name and force requirements in JCS approved plans for equipment requirement reasons. It was his opinion that the more Rescue called attention to their forces at the JCS level, the more pressure could be brought to bear on the requirement for proper combat recovery equipment and forces.

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This certainly was a factual statement as it pertained to the identification of the requirement for SAR forces in SEA and also support of these forces after deployment to Thailand and South Vietnam. Facilities and logistics support for all detachments that deployed during 1964 were, of course, sadly lacking. This, however, could not be attributed in toto to lack of planning or inadequate planning and coordination, as the rapid buildup in forces certainly impacted directly on the facilities and logistics support problems.

The fact that the requirement for rescue forces was apparently overlooked by the CINCPAC staff, in itself, indicates inexcusable staff planning.

Although the requirement was overlooked by the CINCPAC staff, other agencies were equally guilty of this oversight. It was the responsibility of all reviewing agencies or implementing agencies possessing these CINCPAC plans to ascertain whether or not the correct forces were programmed. If not, it should have been brought to the attention of the supported commander -- in this case, CINCPAC.³⁹ Although the PARC Commander identified this oversight, the fact that it was not recognized until the initial deployment was underway would seem to be indicative of poor ARS review procedures, with respect to PACAF contingency plans.

All things taken into account, the deployment of LBR detachments to SEA in 1964 was not as bad as it might sound. Considering that this was the first time ARS had a requirement to move LBR units in relatively large numbers; considering the operational control structure of these units, that had been imposed upon ARS, and the fact that they were not included in any kind of a JCS approved plan; considering there was no opportunity to rehearse ARS mobility plans; it was ^{just} somewhat short of amazing that they arrived at all and were able to become operationally ready in a short period of time.⁴⁰

8. HOW DID ORGANIZATIONAL, COMMAND AND CONTROL ARRANGEMENTS INHIBIT OR ENHANCE THE ACCOMPLISHMENT OF THE TASK?

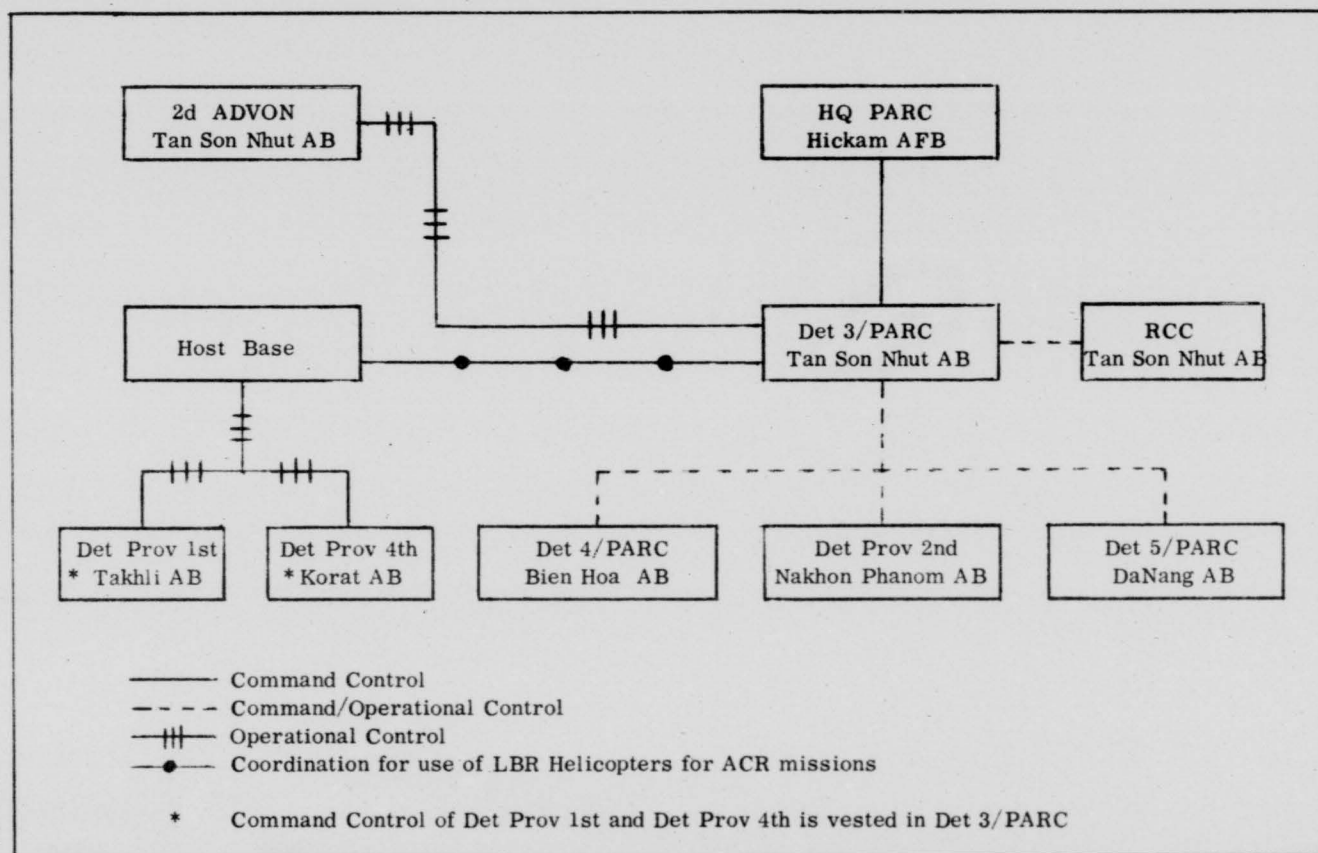
By end 1964, there were a total of five LBR/ACR detachments in SEA, two in the RVN and three in Thailand. ACR detachments were under the operational control of 2d ADVON who exercised this control through Det 3. LBR detachments were under the operational control of the host base commander for Local Base Rescue missions but were utilized and controlled by Det 3 for ACR missions. (Ref Tab E.) This was normally accomplished through coordination with the host base commander.

Since the 13th AF was responsible for all operations in SEA, Det 3 theoretically reported operationally to 13th AF and administratively to Hq PARC. In actuality Det 3 was operationally under the control of 2d ADVON, as they had been delegated SAR responsibility for the area by 13th AF.⁴¹

(This page is Unclassified)

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Tab E



With the intensification of jet fighter activity in SEA in 1964, it became evident that ARS fixed-wing aircraft would be required for SAR support. Initially, HU-16 aircraft were deployed to Da Nang to provide such support.⁴² The HU-16's flew orbit SAR missions north of NKP and in the Gulf of Tonkin for what was referred to then as the "Crown and Crown Alfa Missions."⁴³

The capability of the JSARC to coordinate and control rescue efforts at distant ranges over continental regions was severely limited for various reasons. The main one being a lack of comprehension by the JSARC controllers as to force requirement and lack of on-scene knowledge for effective and efficient employment of the SAR forces involved.⁴⁴ The HU-16's helped to alleviate part of the problem in that they were able to act as a communications relay between the SAR task force and the JSARC.

Inadequate communications made it virtually impossible for the JSARC to be informed of and approve all SAR missions. This was especially true in the case of missions involving Army personnel. The urgency of the mission and the impossible communications, on occasion, resulted in SAR helicopters launching without establishing contact with the JSARC.⁴⁵

9. ADDITIONAL CONSIDERATIONS: None.

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10. SUMMARIZE LESSONS LEARNED:

- a. Plans for the wartime deployment of SAR forces were inadequate at all echelons.

Existing Air Force policy that ARS be equipped and manned for peacetime SAR only; coupled with the fact that ARS did not have an official wartime mission; certainly impacted on the interest, time and effort devoted to preparing effective combat plans. In spite of the above, the European and Pacific Commands alone tasked ARS in 88 separate contingency plans, most of which required a combat rescue force. Air Rescue Service Operations Plan 510, conceived to deploy LBR units in support of natural emergencies and contingencies, was in-being but could hardly be considered adequate for deploying units for a Vietnam type operation. Subsequent plans were prepared as the requirement to deploy SAR forces was generated. The ARS Commander addressed this subject in a letter to the PARC Commander dated 31 August 1964. All things taken into account, the deployment of LBR detachments to SEA in 1964 was not as bad as it might sound. Considering that this was the first time ARS had a requirement to move LBR units in relatively large numbers; considering the operational control structure of these

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units, that had been imposed upon ARS, and the fact that they were not included in any kind of a JCS approved plan; considering there was no opportunity to rehearse ARS mobility plans; it was somewhat short of amazing that they arrived at all and were able to become operationally ready in a short period of time.⁴⁶

- b. Incomplete staff actions resulted from the lack of coordination between respective staff agencies within PARC, PACAF and 2d AD.

Incomplete staff action/planning was indicated in several instances; however, the two following examples highlight the problem.

The paramount problem in deploying the initial TDY Det Provisional 3 force to Thailand was the apparent lack of planning and coordinated actions between 2d AD, PACAF and PARC. PACAF OPORD 116-64 tasked 13th Air Force to provide the necessary housekeeping and station sets at the operating location. The 2d AD staff understood that the LBR unit could deploy to a "bare strip" and be self-sufficient. PARC and PACAF thought that 2d AD knew the manning and capability of ARS and expected 2d AD to furnish logistical support. Apparently, the necessary planning and coordination

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was never accomplished prior to the actual move.⁴⁷

The only indication of intra service plans and planning was found in a letter from the PARC Commander to the ARS Commander dated 13 August 1964. He indicated that as a member of the PACAF Battle Staff and having information available on the Air Order of Battle he was able to notice a lack of SAR forces and detect the fallacious planning on the part of the CINCPAC staff. When the PARC Commander queried on the absence of SAR forces, even though they were properly included in the appropriate plan, the answer indicated that they had been overlooked by the CINCPAC staff.⁴⁸

Although the requirement was overlooked by the CINCPAC staff, other agencies were equally guilty of this oversight. It was the responsibility of all reviewing agencies or implementing agencies possessing these CINCPAC plans to ascertain whether or not the correct forces were programmed. If not, it should have been brought to the attention of the supported commander -- in this case, CINCPAC.⁴⁹ Although the PARC Commander identified this oversight, the fact that it was not recognized until the initial deployment was underway would seem to be indicative of poor ARS review procedures, with respect to

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PACAF contingency plans.

11. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a and b, generally support, in the same alphabetical order, the lessons learned that have been listed above:

- a. That the deployment of SAR forces receive the same consideration as tactical forces in contingency plans at all echelons.

This would provide for a more orderly deployment and prevent the oversight of SAR forces until their services were required.

Also, ARS would then have a foundation for their plans.

- b. That the ARS wartime mission be cemented by Air Force and the requirement for use of SAR forces in contingency planning be firmly established.

The peacetime utilization of ARS forces in contingency plans and exercises would preclude omitting them during wartime. ARS staff agencies at each echelon must constantly review and appraise the plans of supported commands, calling their attention to any inconsistencies.

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PLANS, CONCEPTS AND DOCTRINE ANALYSIS

1962-1964

FOOTNOTES

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3. Briefing, Col Brooks to Hq MATS, Subj: "Deep Look" Briefing (Revised), 9 April 1965, p. 6.
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5. Briefing, Subj: "Deep Look" Briefing, 1965, pp. 28-29.
6. MAC History (1962), Volume I, p. 66.
7. Ltr, CSAF (AFXOP-SV-FS) to Hq MATS, Subj: Urgent Requirement for Helicopter Units, 5 Feb 1963, p. 1.
8. Ltr, Hq ARS (ARXDC) to Hq MATS (MAXDC), Subj: ARS Operations Plan 510, Local Base Rescue Contingency Force (LBRCF) Mobility and Organization, 1 Aug 1963, p. 1.
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11. Ltr, Hq ARS (ARMDC) to Hq ARS (ARODC/Lt Col Hartley), Subj: Logistic Support Concept for HH-43B Helicopters, 9 April 1964, pp. 2-3.
12. Ltr, Lt Col Hartley to Comdr ARS, Subj: Report of Conditions Existing in SEA, undated, Atch 1, p. 1.
13. ARS Operations Plan 510, 31 October 1964, Preface, p. iii.

(PLANS, CONCEPTS AND DOCTRINE ANALYSIS Footnotes - continued)

14. ARS Programming Plan 563, April 1964, Record of Changes (p. ii) and Basic Plan, p. 1.
15. ARS Operations Plan 510, 31 October 1964, op. cit., p. 2.
16. Ibid., Basic Plan, Annex FOXTROT, Annex NOVEMBER.
17. Ltr, Comdr Central ARC to Comdr ARS, 31 Aug 1964, p. 1.
18. Ibid.
19. Ibid.
20. Ibid.
21. Ibid., pp. 1-2.
22. Ibid., p. 2.
23. Ibid., p. 3.
24. Ibid., pp. 3-4.
25. Ltr, Comdr PARC to Comdr ARS, 13 Aug 1964, p. 2.
26. Ltr, Comdr ARS to Comdr PARC, 31 Aug 1964, p. 2.
27. Ltr, Comdr PARC to Comdr ARS, 10 Nov 1964, pp. 1-2.
28. ARS Programming Plan 563, April 1964, Basic Plan, pp. 1, 6.
29. Ibid., Annex FOXTROT, pp. F-2, F-3.
30. Ltr, Comdr PARC to Comdr ARS, 10 Nov 1964, op. cit., pp. 1-2.
31. Ltr, Comdr ARS (ARCCO) to MATS, Subj: Replacements for Combat Attrited HH-43B Helicopters, 8 Aug 1964, p. 1.
32. Msg, Hq ARS (AROOR) 50319 26 July 1965, Subj: Deployment Responsibility for Southeast Asia, pp. 1-2.

(PLANS, CONCEPTS AND DOCTRINE ANALYSIS Footnotes - continued)

33. Ltr, HQ USAF to MATS, Subj: Mobility Requirements for Local Base Rescue Units (LBR), 1 May 1964, p. 1.
34. Ltr, Hq ARS (ARXDC) to Comdr ARS, Subj: Col Derck's Letter to General Williams dtd 30 July 64, 20 Aug 64, p. 1.
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36. ARS Operations Plan 510, 31 Oct 64, op. cit., Basic, p. 1.
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38. Ltr, Comdr ARS to Comdr PARC, 31 Aug 1964, op. cit., p. 1.
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44. Ltr, Col Edward Krafka to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, 24 Oct 1968, p. 4.
45. Ltr, Det 8 AARRC (Capt Gordon L. Hall) to Hq ARRS (ARXDC), Subj: Resume of SEA Tour, 21 Oct 1968, p. 2.
46. Ltr, Comdr ARS to Comdr PARC, 31 Aug 1964, op. cit., pp. 2-3.
47. Hartley, undated, op. cit., Atch 1, p. 1.
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TASK ANALYSIS

1965 - 31 March 1968

1. LIST AND DESCRIBE EACH ASSIGNED TASK: The tasks assigned to the LBR units during the 1965-68 time period remained essentially the same as for the 1962-64 period. Only the magnitude of the task was subject to change.

AIRCREW RECOVERY: The ground and air war in SEA began to expand by leaps and bounds in 1965. Additional fighter aircraft were constantly being deployed to support the ever increasing tempo of operations. The increase in USAF tactical and reconnaissance activity automatically increased the SAR requirements as well as extended the SAR area of operation deep into Laos and North Vietnam. The HH-43 could no longer be considered even marginally acceptable to prosecute the ACR task in the extreme northern parts of the RVN or in NVN.

To support the increasing demands for Rescue forces, SEA SAR requirements were identified in March 1965 based on a total SEA combat SAR force concept and not on a fragmented basis. It indicated a minimum end force of 16 HH-3C's was required with 4 located at Da Nang, 4 at Bien Hoa, 4 at Nakhon Phanom and 4 at Takhli. This, of course, was in addition

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to the SEA LBR force and not in any way designed to reduce the number of HH-43's in theater. The deployment of these additional 16 helicopters was based on immediate, or within the near future, availability.¹ It was almost two years later before a total of 16 HH-3E's were made available in theater; and as a result, the four base deployment never became a reality.

By end 1964, there was a total of 15 HH-43B/F helicopters in SEA of which 9 were officially designated to support the ACR task. This included 3 each at Bien Hoa, Da Nang and NKP. By end 1965, the total had increased to 25 HH-43B/F models of which 14 were dedicated to ACR. By end 1966, 26 HH-43's had been assigned to RVN and Thailand; but the number primarily assigned to ACR dropped to 10 due to attrition. By end 1967, there were 30 HH-43's in SEA of which 7 were assigned to the primary mission of ACR. The number increased to 32 by 31 March 1968. (Ref Tab G, p. 160)

The apparent drop in LBR forces dedicated to the ACR task was due in part to attrition (5 HH-43F's had been lost) and in part to the introduction of these new helicopters which eventually assumed responsibility for ACR in the northern portion of the RVN and in NVN. These new helicopters (CH-3C/HH-3C/HH-3E/HH-53) began to arrive in late 1965. By end 1966, there was a total of 12 in theater, increasing to 24 by December 1967 and further to 28 by 31 March 1968. The first 2 of these new helicopters (CH-3C) were

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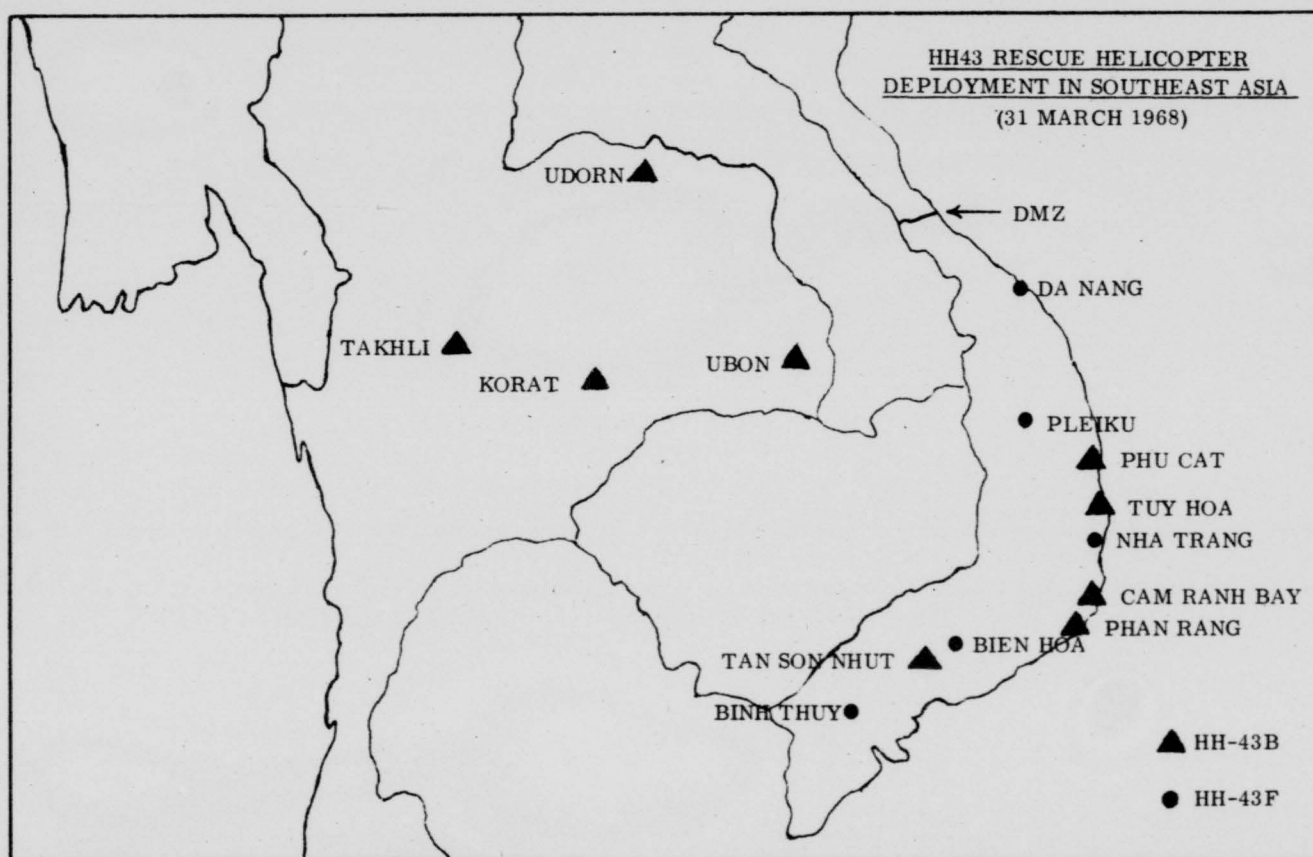
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positioned at NKP during FY 1/66 to support the ACR mission; however, by the latter part of 1965 they were transferred to Udorn which had been designated as the ACR recovery base for Thailand. All follow on HH-3C/HH-3E/HH-53 helicopters were assigned to Da Nang, Udorn and NKP for the primary purpose of prosecuting out-country ACR missions. This, in essence, meant that all of South Vietnam with the exception of the extreme northern part would still have to rely on the LBR forces to accomplish in-country ACR missions.

The introduction of these new helicopters into Southeast Asia did not reduce the scope of the aircrew recovery task as it pertained to LBR detachments. From January 1965 through end September 1965, HH-43B/F sorties increased from 1,263 to 2,818. (Ref Tab C p. 36, Tab D p. 39.)

AIRBORNE FIRE SUPPRESSION: The task of providing airborne fire suppression remained constant throughout this time period; however, the magnitude of the task increased sharply due to the heavy influx of fighter and reconnaissance aircraft. Although HH-3C/E's were located at Da Nang and Udorn, this did not delete the requirement for the airborne fire suppression capability at these bases. LBR detachments in support of the airborne fire suppression task had increased from 5 in December 1964 to 14 by 31 March 1968. (Ref Tab F.)

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MEDICAL EVACUATION: Despite the fact that ARS was not tasked for the med-evac mission, the requirement increased many fold. For example, during January/February 1968 one detachment covered 31 airborne emergencies and 14 miscellaneous support missions. Between 29 January and 15 February this unit flew 83 hours, 66 of which were in support of med-evac missions. During January and February 1968, 1,796 personnel were airlifted on Rescue med-evac missions from Da Nang, 853 by HH-43's.²

2. FOR EACH TASK:

a. HOW DOES TASK RELATE TO CURRENT CONCEPTS?

It should be emphasized that the fragmented introduction of these 16 HH-3C/E's over approximately a 21-month period could not replace a like number of HH-43's, since the introduction of new equipment did not build up the SAR capability in SEA from a depth of force standpoint. These new helicopters were urgently needed, along with the already existing SEA SAR force, to keep pace with rapidly increasing SAR requirements, particularly when attrition was considered. Depth and balance of force was essential. Until such time that the complete recommended SEA SAR force concept was implemented, this depth would not be realized.³

AIRCREW RECOVERY: During the 1964 time period the task of ACR could not be related to combat concepts as peacetime concepts, tactics and techniques were employed to prosecute the wartime ACR mission. This,

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of course, was due to the lack of a concepts, tactics and techniques data bank being established after Korea and further compounded by the deletion of the ARS wartime mission in 1958.

During the June-December 1964 period, effort was initiated to develop tactics and techniques based upon memory of Korea activity; for example, the orbit concept and the escort of helicopters during search and recovery missions.⁴ However, the nature of that war and the equipment then available dictated tactics significantly different from those used in SEA. Because the threat in Korea was primarily from the air and not the ground, low approaches were made to the target. Since the majority of aircraft lost was a result of air battles, the SAR forces were not usually required to extract survivors from heavily defended areas.⁵

This, of course, did not hold true in SEA which dictated the need for different concepts, tactics and techniques. Generally, these came about as a result of necessary innovations to meet the needs for effective SAR in Southeast Asia.⁶ Much of this was learned through trial and error on combat missions which, of course, must be generally accepted as not the most ideal environment for developing concepts, tactics and techniques.

As one highly experienced helicopter pilot stated:⁷

The greatest problem was in operational concepts.
What was a mission, where did foolishness start and

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operational feasibility end? Who was responsible for the mission? How was the operation to proceed? The fact that all work had stopped on the aircrew recovery concept at the end of the Korean War would have been a mortal blow but for the fact that some personnel were still in the system to take the old concept and adapt it to the present conflict.

The failure to define areas of responsibility for collocated HH-43's and HH-3E's presented some operational problems as evidenced by the following comments of an LBR detachment commander located in Thailand:⁸

. . . . On one occasion, an HH-3 scrambled on a F-105 bail-out 15 miles from base while the HH-43 was already airborne for the same emergency. . . . Another time an HH-3 was scrambled on a bail-out while it was performing a Functional Check Flight (FCF) in the local area and the HH-43 was enroute to the bail-out area. Coordination with the Jolly Green operations and the Udorn RCC resulted in a temporary understanding, however, nothing in writing ever came out of this. This lack of definitive guide lines caused a lot of misunderstanding and hard feelings. Established areas of SAR responsibility would have alleviated this situation.

The use of opportune aircraft in support of in-country SAR missions presented a rather serious problem that no doubt impacted quite heavily on how efficiently some SAR missions were conducted. Generally, aircrew members of opportune aircraft were not knowledgeable in search patterns to be flown as well as other techniques employed in recovery missions. This type of information was not readily available to opportune aircrew members, nor was there normally an opportunity for ARRS personnel to provide a

briefing. As one detachment commander put it:⁹

. . . . I seldom had the opportunity to personally brief or even talk to the pilots of the search aircraft, even on the telephone. Most of the aircraft involved were from other bases. Advising the pilots of the area to be searched was difficult and the information they received was usually second or third hand. Usually, it was not even possible to know the number of aircraft flying in the search area, much less the time flown, area covered, percent of coverage, etc. Although we located three or four aircraft that we were assigned to search for, it was certainly not through a well organized or well planned SAR effort.

Each ACR mission generally presented its problems as to force requirements and the tactics and techniques of force employment.¹⁰ For example, the Udorn detachment initially had LBR as its only mission. In June 1965, their mission responsibility was expanded to include ACR, which soon became primary. An equally important sub-mission developed in conjunction with the ACR mission. This was to scout approximately 30 Lima sites in Laos to determine which would be suitable for use as helicopter Forward Operating Locations (FOL) and to subsequently prepare those sites selected. The range of the HH-43B was generally accepted as 150 nautical miles. However, the distance involved in fulfilling the ACR mission often far exceeded this, inasmuch as on several occasions Udorn helicopters (HH-43B's) flew considerably north of the Hanoi latitude. On one mission, an HH-43 flew to a point 33 miles west and slightly north of Hanoi. This

increased range was made possible through the use of a rather dangerous "Rube Goldberg" arrangement of supplying additional fuel from drums carried in the HH-43. A reliable system for fuel re-supply to the FOL's was an overriding consideration during the period that HH-43 s were used for deep penetration missions.¹¹

AIRBORNE FIRE SUPPRESSION: Since operational concepts and procedures for the airborne fire suppression task were not generally unlike those used in any other areas, no particular difficulties were encountered in this facet of operation.¹² It should be reiterated that this task like that of ACR was generally conducted in a hostile environment. This held true, at least for South Vietnam, where the greater portion of the country was considered hostile and traffic pattern flight could result in disaster. For this reason, operational concepts, tactics and techniques required constant revision to ensure that methodologies best suited for each task were employed.

Two LBR detachments in Thailand initiated a policy, in late 1965 and early 1966, of maintaining an airborne orbit (HH-43B with fire suppression kit attached) to provide coverage for armed fighter aircraft during launch and recovery. As the pace of the air war over North Vietnam quickened, the number of fighter sorties dramatically increased, likewise increasing the number of helicopter sorties and flying hours required to maintain the airborne orbit. By early 1967, these detachments were expending up to

90 flying hours monthly in support of this concept. Additional mission flying raised this monthly total to approximately 105 hours. This did not include training flights, which were held to a minimum because of the increasing difficulty in keeping the helicopters in-commission. The fighter wing commanders would not consider a cessation of the airborne orbit.¹³

The 3d Group Commander was apprised of the criticality of the situation, which forced him to defend the position that LBR detachments could not and were not required to provide an airborne alert during mass launches and recoveries. This was done with a study of resources available, training requirements to fulfill and the increased non-productive orbit flying time. To provide the requested coverage would have required one additional helicopter plus additional manning. Eventually, the requirement for airborne orbit coverage was deleted.¹⁴

BATTLEFIELD MEDICAL EVACUATION: Med-evac, although not an assigned mission for ARRS, must be addressed as a bona fide task as it must be assumed that ARRS will continue to support this mission on an as required basis. This ancillary task, which has turned out to be a voluminous one, must be recognized and considered when designing or modifying SAR equipment. This, only to the extent of not degrading the SAR vehicle capability to perform the primary missions of LBR and ACR. The ARRS med-evac

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effort in Vietnam has on numerous occasions proven that the HH-43 was not suitable for this task, primarily due to its limited capacity for transporting casualties. This has resulted in rescue crews being exposed to a hostile environment for longer periods than necessary and has created delays in transporting wounded to adequate medical facilities. The concept of operation as pertains to this task can to some degree be related to the ACR mission in that helicopters in support of this mission frequently are exposed to enemy fire.

b. WHAT WAS PURPOSE (NATIONAL/MILITARY OBJECTIVE) OF DOING TASK? The almost concurrent loss of the first U.S. reconnaissance plane and a Navy fighter escort aircraft in Laos caused a considerable amount of consternation since the Pathet Lao were then provided with tangible evidence that the U.S. role in Laos was not merely one of passive reconnaissance. Since Air America was supposedly a private company, their continued operations could possibly have led to an embarrassing incident for the U.S. government. To preclude this occurring, authority was withdrawn for the use of Air America pilots in support of rescue operations. Although the general situation remained sensitive, USAF F-100's and F-105's were committed to fly RESCAP missions and to make strikes in Laos. SAR operations in North Vietnam were not at that time authorized or needed; however, MACV directed the 2d AD to prepare a plan for such a contingency.¹⁵

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Although the USAF rescue capability increased in 1964 and throughout 1965, Air America remained as the backbone of the humanitarian operation. Increased operations in Laos and strikes against North Vietnam placed new demands on SAR forces in the spring of 1965. Although Air America rescue operations in NVN were not specifically authorized, on several occasions, Air America pilots crossed the border to make pick ups. Since Air America could not make a full-time commitment of SAR forces and since there were political risks involved in using Air America aircraft to cross the border, USAF aircraft were introduced and staged forward to positions from which they could reach into NVN. The State Department in an effort to keep official and visible American activity in Laos at a minimum, suggested that Air America continue to furnish the major SAR effort in Laos. However, since the additional helicopters, Short Take Off and Landing (STOL) aircraft, and communications equipment necessary for the company to do this, were not forthcoming, the Air Force was required to assure major coverage in Laos also.

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The national and military objectives of performing these tasks were clouded in an aura of covert operations prior to 1965. When U. S. policy made it clear that U. S. military forces would be used to prevent a communist "take over" in South Vietnam, the military objective gradually became overt. The intensification of the war, which began in 1964 and increased in momentum

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from 1965 on, left no doubt in the minds of the political arena that U.S. forces in SEA were providing more than advisory and training services to the government of the Republic of Vietnam. From 1964 on, the clandestine atmosphere of the conflict began to disappear and U.S. policy gradually dropped the "advisory and training role" that had been attached to U.S. forces in SEA and that had been adopted as the "soft sell" of U.S. national and military objectives in SEA.

c. WAS ASSIGNMENT OF THIS TASK TIMELY? When this question was addressed for the 1962-64 time period, it was stated that a requirement existed for professional SAR forces long before their arrival in SEA. This, of course, did not hold true for the 1965-68 period, so a direct answer to the question must read that the assignment of the task was timely. However, the rapidly increasing requirement for SAR forces did not permit timely support of the task, nor did the equipment designated to prosecute these tasks provide an adequate or effective capability. When all facets of the task assignment are considered, and in light of the expanding requirement, then task assignment as pertained to SAR coverage for certain areas and missions cannot be considered timely for the early portion of this period.

It must be reiterated that, throughout 1965 and well into 1966, professional SAR forces in theater were inadequate for the required missions,

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and secondary SAR forces were utilized to fill the void. Although the task of controlling these random forces had been assigned to ARRS, through the JSARC at Tan Son Nhut and the two sub Rescue Control Centers at Son Tra and Udorn, this could not be construed to mean that the responsibility for prosecuting SAR missions constituted a valid or timely task assignment for random forces not adequately equipped to do this job. When viewed in this context, the rationale would tend to further support that the total task was not assigned on a timely basis. In summary, the tasks to be performed had been identified and assigned long before adequate SAR forces became available.

d. WHAT WERE THE CONSTRAINTS? U. S. military operations in Southeast Asia were marked by a variety of political and operational constraints. Self-imposed restrictions on the application of military power was almost certain to remain an essential feature of our national policy. The nature of the conflict in Southeast Asia and the policy objective of conveying to the enemy the limited nature of our response, even while we conducted air strikes on his territory, required careful consideration of the restrictions to be adopted. A constraints policy had to be fashioned which would minimize the risk of major escalation but which also would permit use of enough measured force to assure attainment of our objectives - to check NVN support of insurgency in South Vietnam and Laos.¹⁷

The rules established for conduct of air operations to date have

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taken a number of forms. These have included geographic and political restraints; limitations on the size, frequency and altitude of flights; and restrictions on weapon types employed. In combination, they have posed a challenging, sometimes frustrating succession of problems for the commanders and staff officers charged with the planning and conduct of an effective campaign. Gradual modification of the constraints policy occurred during the reporting period and some of the more restrictive rules which applied to earlier armed reconnaissance and strike missions were relaxed. Several of the constraints that still existed limited the capability of our forces to conduct a campaign that would achieve the desired objective. The repeated discussions and exchanges which generated at all levels as a result of these constraints, centered mainly on the specific proscriptions rather than on the fundamental policy considerations which established them.¹⁸

Certainly the LBR equipment utilized throughout this time period imposed rather serious constraints as it was limited with respect to the severity of the hostile environment that it could survive in. Speed, range and litter capacity were also constraints when considering effective accomplishment of the three assigned tasks.

Command and control functions (JSARC and sub-Rescue Control Centers) were to some degree self-imposed constraints that were magnified by the lack of adequate communications and experienced controller personnel who understood equipment capabilities and had sufficient knowledge of

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geographic, weather and hostile environments to make proper decisions.

e. WHAT WERE THE EXPECTED RESULTS? The activation of new LBR detachments in SEA would not bring about any marked improvement in the percentage of successful recoveries. The tremendous increase in the tactical sortie rate, particularly into North Vietnam, could not be offset by the introduction of a few additional LBR detachments.

Combat analysis and experience had borne out the need to improve reaction time, particularly with respect to ACR missions. The peak level of conflict was expressed in out-of-country sorties at 18,000 per month and in-country sorties at 58,000 per month. Even after the introduction of HH-3's and HH-53's, the continued use of the HH-43's to support the bulk of the in-country sorties would preclude providing a faster reaction time for a high percentage of ACR missions. In addition, the approved OSD program IV level of 32 HH-43's - 22 HH-3E's and six HH-53B's would not be attained until late 1967 or early 1968. Even when it was attained, the lack of sufficient ACR helicopters would remain the major deterrent to fulfilling the total requirement. It was thoroughly understood that even though recovery forces were slowly increasing, the tremendous increase in monthly sorties would place the increased SAR capabilities behind the "power curve" resulting in a downward trend in the recovery rate. This would hold true throughout this time frame as from 1965 to

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31 March 1968, the sortie rate over NVN and Laos would more than triple while the SAR forces would barely reach the number programmed to meet the 1965 sortie rate.¹⁹

Improved and broader enemy defense systems, changes in their offensive strategy and/or tactics, and changes in areas of their offensive concentration would have to be considered as factors that would most likely contribute to the decreased recovery rate. Although the introduction of new SAR equipment would help to minimize this downward trend, the fact that HH-43's and secondary SAR forces would still be required to support a large portion of the ACR mission would have to be considered as the main reason for not anticipating a marked improvement in the ACR effort.

f. WHAT WERE THE ACTUAL RESULTS? When addressing this question, one must ask - as compared to what? If considering it from the standpoint of numbers and types of dedicated recovery vehicles available to support the SAR mission, it can be stated and fully supported that professional SAR forces established a truly remarkable record in SEA.

Rescue units were singled out for praise on numerous occasions. Ambassador Maxwell Taylor, in referring to a highly successful mission, wrote, "This is indeed an outstanding record and testifies to the gallantry of your people in exposing themselves to rescue downed comrades". In

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one of many communications, the Commander of the Seventh Fleet wrote, "The intensive search was controlled masterfully and its successful completion is a testimonial to the close cooperation of the Navy and Air Force units involved". After the successful recovery of one of his pilots, the Captain of the Midway wired, "Again outstanding professionalism has been demonstrated by your courageous search and rescue crews". As a result of these and many other outstanding efforts by LBR forces, the 38th Squadron, which controlled all LBR detachments in SEA, was awarded the Distinguished Unit Citation. The Air Force association bestowed an Honor Award upon this same squadron in March 1966.²⁰

This amazing record was not established through the efforts of ARRS forces alone. The Commander MAC, in a tribute to the "Sandys", Navy Carrier Task Groups, and Army aviators from the armed helicopter units, spoke highly of these forces in a letter to the Commander, United States Military Advisory Command, Vietnam (COMUSMACV):²¹

During the past 18 months, search and rescue task forces have saved over 240 lives in the course of combat operations in SEA. Of these, over 125 have been combat aircrew members who have been forced to eject from their damaged aircraft. Frequently, the spotlight of national interest has been focused on these activities, and our units have received recognition from the highest level.

In reviewing many detailed mission reports, I have been especially impressed by the exceptional professionalism and dedication displayed by the members

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of the USAF 602nd Tactical Fighter Wing, Navy pilots from the Carrier Task Groups, and Army aviators from the armed helicopter units. Flying in all kinds of weather and over some of the most hazardous terrain in the world, the pilots from units of all three services have repeatedly exposed themselves to hostile air and ground fire. Time and again they have provided the vital low-level fire support which has enabled our helicopters and HU-16's to effect survivor pick-up. They have all established a truly remarkable record.

Translating the present figures into meaningful terms, the aircrew recovery record alone now stands at something approaching the equivalent of five squadrons of fighter pilots who have been returned to fight another day. It is significant to note that this includes U. S. Navy, U. S. Air Force, and VNAF pilots engaged in a wide range of combat action. This represents a most significant amount of combat capability, and the additive morale factor is beyond measure. Simply stated, the degree of success that our ARRS units have achieved has been possible only because of the untiring support, exceptional courage, and outstanding technical competence displayed by the Air Force, Navy, and Army pilots who have played such a vital role in this life saving operation.

Without reservation, our "Jolly Green" and "Crown" crew members are proud to fly in combined operations with such gallant and dedicated professionals. Their contribution to the accomplishment of a mission dedicated to the basic philosophy "That Others May Live" is a source of the deepest pride and gratitude.

When addressing this question from the standpoint of what could have been done had adequate numbers and types of SAR vehicles been available on a timely basis, then, perhaps the actual results left something to be desired. This perhaps holds true more so for the ACR and MED-Evac tasks than for the airborne fire suppression mission, as equipment

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deficiencies were not so pronounced where this mission was concerned.

Although the success of ACR in SEA was much more impressive than in past wars, it would have been more impressive if the USAF had available helicopters required for this era, instead of converted transport helicopters. It was a generally accepted fact that more helicopters, with improved equipment, would greatly enhance the SAR capability.²²

g. WHAT WERE THE ALTERNATIVES RELATIVE TO THE ALLOCATION AND/OR EXECUTION OF THE TASKS? Once the SAR requirement was identified and the covert nature of the conflict gradually changed to an overt operation, professional SAR forces were authorized. At this point in time there was no alternative relative to the allocation of the task. The air component commander (2nd AD) was assigned SAR responsibility and appointed SAR Sector Coordinator and as such would logically allocate the task to the primary SAR force of the Air Force.

There were several alternatives relative to the execution of the task all of which had some overriding reason as to why they were not implemented. These overriding reasons related to lack of lead time to provide a more desirable SAR vehicle, budgetary limitations and the lack of real estate and adequate facilities to accommodate additional forces on a timely basis. These, along with others, no doubt impacted heavily on the decision to use HH-43's, which were already available

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in large numbers, rather than attempting to provide a CH-3C/HH-3E/HH-53 SAR force on an expedited basis.

3. ADDITIONAL CONSIDERATIONS: None.

4. SUMMARIZE LESSONS LEARNED:

a. The increasing requirement for deep penetration ACR missions into NVN and Laos could no longer be supported with existing LBR equipment.

This increase in air activity over NVN automatically increased the requirement for SAR coverage and conclusively proved that the HH-43 could no longer be considered as marginally acceptable to prosecute these missions. They did not have the range or the capability to survive in the intensified hostile environment. The inability of SAR forces to effectively provide coverage for these long range combat missions can be traced back to the policy that deleted the requirement for a combat trained and equipped SAR force and relegated this important mission to a peacetime operation. This resulted in a SAR force that entered SEA in 1964 with peacetime concepts, tactics, and techniques, plus equipment, despite its remarkable record, that was woefully inadequate to meet the expanding requirements of the conflict. Production or modification lead times, budgetary limitations, necessary training, etc. precluded providing a properly equipped and

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trained ACR force in time to meet this hostile requirement. The austere environment that rescue had been forced to live in for so many years came back to plague them in Vietnam as it had done in Korea some ten to 12 years earlier.

As this lesson learned in Southeast Asia is being recorded for military posterity, it must of necessity bring to mind another lesson learned - that the same lesson learned in Korea was not provided the advantages of Corona Harvest, or if it was it became lost in the post-war military cut-backs.

b. Combat SAR forces were not increased proportionately with the increase in sortie rates.

Depth and balance of force were not maintained as the tempo of the conflict increased. Combat SAR forces were equipped to support a 1965 level of conflict, yet were expected to effectively support the 1968 level of sorties, which had increased over three fold. If the depth and balance of force had been maintained to a reasonable degree, the use of secondary SAR forces could have been held to a minimum resulting in a more effective overall SAR capability.

c. Secondary SAR forces were generally not trained or equipped for the SAR mission.

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Aircrew members manning secondary SAR forces did not possess adequate knowledge of SAR search patterns, approaches and other techniques employed during recovery missions. As a result, secondary SAR forces could not be utilized in the most effective manner, which in some instances contributed to the failure to recover downed aircrewmembers and caused unnecessary loss of aircrew members participating in the recovery effort.

d. The use of "Rube Goldberg" refueling devices exposed SAR forces to unnecessary hazards.

The practice of refueling helicopters from fuel drums stored in the cabin cannot be considered acceptable for a combat environment. The constant exposure to possible enemy fire, or fire caused by fuel handling, created an operational hazard that would have to be weighed in terms of number of personnel exposed to this hazard versus the number to be recovered. This method of extending the range of SAR vehicles produced a higher than normal risk element, which created an imbalance with respect to operational feasibility as opposed to operational logic.

e. Flying hours were not programmed in support of the medical evacuation task.

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Although medical evacuation was not an assigned mission for SAR forces, it must be assumed that in future conflicts ARRS will be required to support it. The ever increasing number of flying hours diverted to support this task created an excessive maintenance workload. Med-Evac missions could be prosecuted to the extent that in-commission rates would preclude accomplishing the primary LBR/ACR mission. LBR detachments should not be expected to support this task "out of hide".

f. The lack of proven combat SAR concepts, tactics and techniques diluted the effectiveness of the SAR effort during the early phase of this time period.

In 1958, Headquarters USAF directed that Rescue be organized, manned, equipped, trained and deployed to support peacetime air operations. It was further directed that no special units or specially designed aircraft would be provided for the sole purpose of wartime search and rescue. This direction in itself deleted any requirement for ARRS to maintain an up to date manual of combat SAR concepts, tactics, and techniques.²³

5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a thru f, generally support, in the same alphabetical order, the lessons learned that have been listed above:

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a. The combat SAR mission must be recognized as a valid wartime requirement that dictates the need for well equipped and well trained forces in being that are capable of operating in approximately the same speed range and hostile environment as the forces they are committed to support. Late, or after the fact, equippage and training of combat SAR forces results in a costly program that does not necessarily produce SAR equipment capable of effectively accomplishing the assigned tasks.

b. Combat SAR forces must be equipped to maintain a depth and balance of force proportional to that of the tactical force and tasks assigned. To provide a SAR posture that does not provide a balance of force capable of prosecuting the level of activity for each task creates an equally severe problem as does the lack of depth. To counteract this, inadequate equipment must then be diverted to support tasks that it was not designed to accomplish.

c. Secondary SAR forces should be provided training in combat SAR procedures and consideration given to providing minimum equipment necessary to adequately support the mission.

d. SAR forces operating in a hostile environment should be provided equipment that has a range capability to support the task. Juryrigged devices that extend the range of helicopters, but that present a definite fire hazard, should not be considered as meeting acceptable flying safety standards, particularly in a combat environment.

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e. Flying hours expended in support of the med-evac mission should be programmed to provide LBR detachments the equipment and maintenance man-hours required to support the total mission. The number of flying hours diverted in support of this "off the cuff" task increased to such an extent that in some LBR detachments the number of flying hours utilized in support of the primary mission, was negligible.

f. Immediate action should be taken to document operational concepts, tactics, and techniques utilized in SEA SAR operations. Qualified personnel should analyze and refine this data to ensure that proven concepts, tactics, and techniques are outlined in an official manual. Participation in tactical exercises and war games would provide a proving ground for updating these procedures.

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TASK ANALYSIS

1965 - 31 March 1968

FOOTNOTES

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2. Ltr, 3d ARRGp (3C) to Commander ARRS, Subj: Monthly Commanders' Ltr, 6 March 1968, pp. 3 - 4.
3. Msg, Hq ARRS (ARXDC) 50132 Mar 65, op. cit., p. 3.
4. Ltr, Hq MAC (MAOCX/Col Mask/3388) to Hq ARRS (ARXDC), Subj: Corona Harvest Study (U) (ARXDC Ltr, 3 Oct 68), 27 Nov 68, p. 4.
5. Project CHECO Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-1966) Continuing Report, 24 Oct 66, pp. 53-54.
6. Ibid., p. 54.
7. Ltr, LtCol Baylor R. Haynes, undated.
8. Ltr, ERSTN (Capt Heeter/5352) to Hq ARRS, Subj: Corona Harvest Study, 23 Oct 68, p. 1.
9. Ltr, Major Ralph H. Bush to ARRS (ARXDC), Subj: Corona Harvest Study, 29 Oct 68, p. 5.
10. Ltr, Colonel Edward Krafka to LtCol Gordon W. Crozier, Subj: Corona Harvest Study, 24 Oct 68, p. 4.
11. Ltr, Major David E. Allen to Hq MAC (ARXLR), Subj: Corona Harvest Study, 15 Oct 68, p. 2.
12. Krafka, 24 Oct 68, op. cit., p. 4.
13. Allen, 15 Oct 68, op. cit., pp. 2-3.
14. Ltr, TUSLOG Det 84 to Hq ARRS (ARXDC), Subj: Corona Harvest Study, 28 Oct 68, p. 1.

(TASK ANALYSIS Footnotes - continued)

15. CHECO, USAF Search and Rescue in Southeast Asia (1961-1966),
op. cit., pp. 30-35.
16. Ibid., pp. 35-36.
17. Project CHECO Southeast Asia Report, Evolution of the Rules of
Engagement for Southeast Asia (1960-1965) Continuing Report,
30 Sept 66, p. 75.
18. Ibid., pp. 75-76.
19. Briefing, General Brooks to Rated Personnel Requirements and
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21. Memo, for General Estes, Subj: Search and Rescue Task Force
Operations in SEA, 19 Apr 66, Attachment 3.
22. Southeast Asia Operational Analysis of Required Performance Parameters
for a Combat Aircrew Recovery Aircraft, 22 May 67, p. 1.
23. Ltr, Hq USAF to Commander MATS, Subj: Reorganization of Air Rescue
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HARDWARE ANALYSIS

1965 - 31 March 1968

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WHAT WAS USED?

Essentially, the same type of equipment was used to accomplish the LBR mission during this time frame as during the 1962-64 period. By end 1964, there were 5 HH-43 detachments in SEA, 3 in Thailand and 2 in South Vietnam, operating 15 aircraft. SAR requirements increased commensurate with increased air operations, to the point that the number of recovery vehicles was fast becoming inadequate.¹ To meet rising commitments, the PCS deployment of LBR units and a substantial increase in airframes was necessary. The 38th Air Rescue Squadron, hereinafter referred to as the 38th Aerospace Rescue and Recovery Squadron, was activated in July 1965 with seven LBR detachments, five in Thailand and two in South Vietnam. By the fourth calendar quarter of 1965 (FY 2/66), the total number of aircraft had increased to 25, 14 HH-43B's and 11 HH-43F's. To provide the most effective SAR coverage possible, required further disposition of SAR forces; and by July 1966 (FY 4/66), the number of LBR detachments under the 38th ARRSq had increased to 12, 8 in South Vietnam and 4 in Thailand. Total aircraft remained almost the same, 27; 17 HH-43B's and 10 HH-43F's. End March 1968 (FY 3/68) found the 38th ARRSq with

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14 detachments, 4 in Thailand and 10 in South Vietnam, operating 32 aircraft; 25 HH-43B's and 7 HH-43F's. (Ref Tab G.)

In July 1965, two CH-3C helicopters were received on a TDY basis from the Tactical Air Warfare Center at Eglin AFB. These aircraft were assigned long range ACR duties into North Vietnam and Laos as a gap filler until the HH-3² recovery vehicle, was available.

The first HH-3's arrived in December 1965 and were augmented by the larger HH-53's in September 1967. These aircraft were positioned at bases in northern Thailand and northern South Vietnam and assumed the long range out-country ACR task.

a. WHY WAS IT SELECTED?

As previously stated, when this question was addressed for the 1962-64 time frame, the HH-43 was not selected as the vehicle required to satisfy the initial Southeast Asia LBR and ACR requirements. It was the only vehicle readily available in sufficient numbers to perform the tasks.

The aircraft had been specifically designed for the LBR mission; and by January 1965, had proven itself capable of acceptable performance as an LBR vehicle in SEA. The HH-43 had limitations imposed by the combat environment, but some of these limiting factors were partially

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*NOTE: The actual acft on hand column represents end-quarter figures and does not reflect those acft returned to the CONUS for depot repair.

HARDWARE		TASK: TO PROVIDE LBR/ACR IN RVN/THAILAND																SHRED OUT: HH-43B/F			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HH-43B	0	0	0	6	6	6	8	8	20	20	20	20	20	20	20	20	20	20	20	20
	HH-43F	0	0	0	0	6	12	12	12	12	12	12	12	12	12	12	12	16	16	16	16
PROGRAMMED	HH-43B	0	0	0	6	12	8	8	8	8	14	14	14	18	18	18	18	21	21	21	21
	HH-43F	0	0	0	0	0	4	6	6	8	11	9	9	8	9	11	11	15	15	15	15
ACTUAL	HH-43B	0	0	0	2	7	11	7	10	13	14	17	17	16	16	18	19	22	23	25	25
	HH-43F	0	0	0	0	0	4	6	6	6	11	10	10	10	10	9	9	9	7	7	7
ATTRITION	HH-43B/F	0	0	0	0	0	0	0	1/F	1/B	0	0	0	1/B	1/F	0	2/F	0	0	1/F	0
STATISTICAL OPS DATA																					
SCRAMBLES	HH-43B/F	0	0	0	0	417	901	1263	1863	2821	3338	3528	3971	4189	3630	3837	4425	4409	4132	4186	4517
SAVES	HH-43B/F	0	0	0	0	3	1	7	16	16	86	60	122	70	69	82	87	81	90	109	97
FSK	HH-43B/F	0	0	0	0	0	0	0	0	0	1	2	0	2	2	3	3	0	7	5	3

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Tab G

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alleviated through modification of the basic aircraft. Long range, heavy lift helicopters had also been approved for ARS, hereinafter referred to as the Aerospace Rescue and Recovery Service (ARRS), and were programmed into SEA during 1965. This relieved the HH-43 of long range ACR requirements into the more hostile areas, where its speed, range and survivability did not permit effective accomplishment of the mission. As the capability in out-country ACR increased, the HH-43 operations would gradually be confined to South Vietnam and Thailand. Considering this more permissive operational environment, the number of these aircraft already in place and the fact that they were performing acceptably left no other logical choice but to retain them for the LBR role. This, of course, providing that the posture of enemy defenses in South Vietnam and Thailand did not change appreciably.

b. WAS IT DESIGNED FOR THE TASK?

Although the HH-43 was not designed nor intended to be used as a combat vehicle, it performed the required SAR tasks, with limitations, until more suitable vehicles became available.

The HH-43B provided no protection for the crew or vital aircraft components, and the ARRS position was that continued utilization of this unmodified aircraft presented an unwarranted hazard. This point was used in an attempt to accelerate a quasi-combat modification of the aircraft.³

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The above deficiency was corrected to some degree in the modified HH-43F, which also provided self-sealing fuel tanks and a slight increase in range. A larger engine was installed but only served to overcome the increased weight resulting from the modification - total performance was not materially changed.

Both the HH-43B and F were capable of effectively performing the LBR fire suppression task when unhampered by ground fire; however, the possibility of small arms fire near operating locations was ever present. Another limiting factor was that the aircraft could not be fueled to react to any type mission. If fully fueled for an ACR role, defueling was required before reacting to a fire suppression task and vice versa.⁴

The ACR task generally demanded a greater radius of action than afforded by the HH-43B/F, particularly missions into North Vietnam and Laos. Only through the ingenuity and determination of the SAR forces were those mission accomplished.⁵ Other factors seriously impaired effective accomplishment of ACR missions. Some of these were alleviated by the HH-43F modification, but not all. The lack of FM communications capability was paramount when U.S. Army units (both air and ground), Forward Air Controllers (FAC) and U.S. Navy Swift boats were involved. On several occasions, time consuming relays were required through

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other aircraft in the vicinity; and situations arose that could have been disastrous to the recovery crew had these communications not been established. The lack of Tactical Air Navigation (TACAN) equipment further compounded the ACR problems during inclement weather and when attempting to locate incident sites. Bailout positions were normally reported by TACAN radial and distance, which required HH-43 crews to attempt location by map reading or Dead Reckoning (DR).⁶ After locating survivors, the hoist cable was not always long enough to penetrate the jungle canopy.⁷ This problem was partially eliminated by installing a longer cable and a high speed hoist on the HH-43F. Portable FM radios were installed to solve the communications problem; however, navigational problems were left unsolved.

With regard to Battlefield Medical Evacuation, the HH-43 was hampered by litter space and the problem was compounded with the HH-43F. This aircraft had space for only one or two litters which necessitated repeated sorties. The increase in required sorties resulted in considerable delay in evacuating severely wounded personnel, exposed flight and ground crews to enemy action for extended periods and increased helicopter maintenance and repair work beyond that expected.⁸

In spite of all the inadequacies listed above, the HH-43B/F helicopters

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flew 45,592 sorties during this time frame, while only seven aircraft were lost; five HH-43F's and two HH-43B's. (Ref Tab G, p. 160)

c. WAS IT USED PROPERLY?

It must be generally accepted that the available equipment was properly used in terms of the SAR forces doing the best they could with what they had. There was no established combat SAR methodology in being when rescue forces commenced operations in SEA; however, by 1965, those combat recovery techniques that had proven the most successful to date were being used. These concepts of operations had evolved through experience, and were the most acceptable in terms of aircraft capabilities and survivability. Refinement of old ideas and development of new approaches to the problems were a constant process.⁹

As the pace of air operations quickened, SAR forces were required to position themselves at the most advantageous locations, commensurate with the scheduled air strikes, to overcome their disadvantages in range and speed. Direction for preplanned missions came from 2d AD Frag Orders, and the 38th ARRSq alerted and directed the rescue forces to meet the mission requirements. Each detachment maintained a scramble alert posture to meet any emergency within their capability and, when required, prepositioned helicopters at advanced locations as close as possible to the planned strike areas. Fixed-wing rescue aircraft operating as far

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forward as practical acted as intermediate on-scene command posts to coordinate and control recovery activities as required. These aircraft scrambled the helicopters to effect recoveries within their limited range capabilities.¹⁰

The range of the HH-43 was nearly doubled by the use of three and sometimes four 55 gallon drums of fuel placed in the cabin. Hundreds of hours were flown in this configuration, and thousands of gallons of JP-4 were transferred by hand pump to the helicopter fuel tanks. Using this makeshift refueling system, several missions were flown considerably north of the Hanoi latitude.¹¹

The practice of deploying two helicopters for each recovery mission continued. The low aircraft in the pair would attempt the recovery while the high aircraft stood by in the event his services were needed or to lend any assistance required. By early 1965, Rescue Combat Air Patrol (RESCAP) for SAR aircraft was being provided by USAF F-100 and F-105 strike aircraft. In August 1965, a USAF Air Commando Squadron began rotating A-1E aircraft to northern Thailand to provide Rescue Escort (RESCORT). In February 1966, this unit moved its operations to northern Thailand, with SAR RESCORT as one of its primary missions.¹²

The Search and Recovery Task Force concept was refined and continued in being with the introduction of HH-3's and HH-53's into the ACR

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missions. The SARTF was composed of two helicopters for the recovery, four A-1E's for search and RESCORT and one fixed-wing rescue aircraft for coordination and control. Other USAF tactical alert aircraft were also available for RESCAP if required. When launched on a mission, two A-1E's proceeded directly to the objective area, assumed On-Scene Commander (OSC) duties and began a search for the downed airman. The remaining two A-1E's escorted the two helicopters to the area, flying above small arms range; and upon arrival, orbited until the OSC made positive radio contact with and located the survivor. The OSC then determined if the area needed neutralizing or whether the helicopter could survive the environment without it. If neutralizing was necessary, the A-1E's performed this task with assistance from the RESCAP aircraft. White phosphorous bombs were sometimes used to seal off the area. When cleared in for the pick up, one helicopter descended for the recovery while the other assumed OSC duties and continued to orbit. The A-1E's orbited the general area but not directly overhead so as not to reveal the location of the downed pilot.¹³

To most effectively perform all assigned tasks, a mission precedence was established with respect to available equipment.

The HH-3 and HH-53 helicopters, when assigned to SEA, were positioned at three northern bases in South Vietnam and Thailand to

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provide a long range ACR capability in support of air operations over north Vietnam and Laos.¹⁴

The HH-43B/F retained ACR, fire suppression and battlefield medical evacuation responsibilities in South Vietnam and Thailand and responded to out-country requirements only when an HH-3 or HH-53 was not available. The HH-43B/F forces were selectively based to place HH-43F's in those areas with the heaviest ACR requirements. Force disposition documents functionally designated HH-43's as either primary LBR or primary ACR with respect to the model aircraft and area to which assigned.¹⁵ The HH-43B performed the combat ACR task only in emergencies or when the environment was judged non-hostile.¹⁶

d. DID IT PERFORM AS EXPECTED?

Mission accomplishments recorded by the HH-43B/F indicated its total performance far exceeded expectations.

The increased tempo of air operations greatly increased the demands placed on helicopter detachments. In meeting these demands, the number of HH-43B/F scrambles increased from 1,263 during the first calendar quarter of 1965 (FY 3/66) to 4,186 during the first calendar quarter of 1968 (FY 3/68). During the period January 1965 through March 1968, an average of more than 3,500 scrambles per quarter were flown which

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equated to approximately 140 scrambles per aircraft per quarter. (Ref Tab G, p. 160)

The HH-43B/F was credited with saving 895 lives through the above efforts. Seven HH-43's were lost during this same period; if a monetary value could be placed on a man's life, the cumulative total would certainly exceed that of seven helicopters.

The effectiveness of the HH-43 in support of the LBR and ACR missions in the combat environment was clearly supported by a review of the mission narrative reports. The following recovery was made approximately 80 miles due west of Hanoi and demonstrated how the effective range of the HH-43 was extended by using prepositioned forces and the utilization of makeshift refueling rigs. Further, how the inadequate speed was overcome by orbiting as close as possible to the strike area and how the SARTF operations were conducted.¹⁷

At 1435L on 31 Aug 65, PEDRO 1 and 2 (Rescue Helicopters of Det 5, 38 ARSQ) departed deployment site 107 (2024N - 10343E) enroute to an orbit point as near as practicable to the next scheduled air strike.

At approximately 1450L, the phrase, "Number 1 is down" or something similar was heard on UHF. PELT 06 (Rescue C-54) attempted to direct us toward the general area of bailout, the exact coordinates being unknown at that time.

Approaching the target area, PEDRO flight was very heavy with fuel because they had been prepared

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to fly orbit for an extended period. Realizing the difficulty of hovering with such a fuel load, PEDRO 1 jettisoned a barrel of JP-4 (460 Lbs).

Prior to the arrival of PEDRO flight, PELT 06 and the Rescap had positively located the downed pilot at 2105N - 10420E. PEDRO flight arrived overhead at 1510L. PEDRO 1, the pickup helicopter started descent immediately. PEDRO 2 stood by at 10,000 ft. At approximately 2500 ft above the terrain, PEDRO 1 spotted the chute and an orange smoke flare and moved in for the pickup.

The terrain was made up of many small hillocks, 200 - 300 ft high and heavily covered with vegetation, tree height estimated 100 - 125 ft. The hillock on which the survivor was located was approximately 300 yards from the edge of a cultivated valley, down the middle of which was a well marked road. Estimated average terrain altitude, 2500 ft.

As the helicopter hovered over the chute, the hoist operator's inter-phone went dead. The survivor could not be seen. The hoist was lowered into the heavy foliage and within a minute or so, the hoist cable became taut. The hoist was raised and within seconds the pilot was seen emerging from the foliage. The survivor was secured in the helicopter and PEDRO 1 quickly departed the scene at 1520L.

During the hoist operation several groups of people were seen running toward the pickup area. However, warning rockets from the Rescap discouraged further approach. Additionally, two men were seen running up a stream bed about 100 yards from the hovering helicopter. The co-pilot, alert to such an emergency, fired his M-16 in automatic almost continuously during the entire hoist operation. The helicopter did not sustain any battle damage.

The survivor was in good condition, although he had a deep laceration in his left ear. The medic treated it and bleeding stopped.

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PEDRO 1 rejoined PEDRO 2 and both helicopters proceeded to deployment site 36 (2000N - 10330E) for refueling, landing at 1645L. They departed site 36 at 1715 arriving Udorn AB, Thai at 1925L. Total time, 8:20, 6 sorties.

The mission cited below rather vividly demonstrated how the HH-43F responded to the fire suppression and battlefield medical evacuation tasks.

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While monitoring the detachment UHF radio a distress call on guard channel was heard. The report was that a truck convoy had been ambushed and five trucks were observed burning. A request for fire suppression was made, so Pedro 56 scrambled with the firemen, para-rescueman, and FSK. After arriving at the scene, several trucks were observed burning and ammunition was exploding and scattering shrapnel and debris in all directions. Pedro 56 orbited until the on-scene frequency was passed and contact was made with Headhunter 46, a FAC in the area. He advised that if we could land, there were wounded that needed evacuation to the 71st Evac Hospital.

Pedro 56 landed the FSK on the road near a burning truck and then landed in front of the kit on the road approximately 700 feet from the exploding ammunition trucks. The firefighters and pararescueman departed the aircraft to locate wounded personnel. A fireman reported back to the aircraft that there were wounded near the exploding trucks, but that they couldn't get to them while the ammunition was still going off. The fireman was directed to use the FSK to extinguish the still burning trucks. As this was being accomplished, the pararescueman and the other fireman were approaching the helicopter with 2 wounded Army personnel. They were loaded on and taken to 71st Evac Hospital at Pleiku. As Pedro 56 was en route to the hospital, word was passed to scramble the secondary aircraft and crew to assist in

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transporting the wounded. Pedro 74 picked up 2 Army wounded while Pedro 56 landed at the rescue area and refueled. Pedro 56 returned to the scene and picked up one Army wounded and Pedro 74 picked up 2 wounded NVA prisoners. Pedro 56 then picked up one wounded NVA prisoner and 1 US KIA. Pedro 56 landed at 1300 and Pedro 74 returned to the scene and picked up the fireman and the FSK. Pedro 74 landed at 1305.

During all approaches and landings at the scene ammunition was exploding from the burning trucks and shrapnel and debris were scattered over a large area. Also occasional ground fire was heard and both fireman and pararescueman had to find cover because of sniping.

During debriefing it was learned that the pararescueman had advanced to a jeep and tank where he asked if there were any wounded. An Army Captain stated that there was plenty of wounded lying near the exploding trucks, but that no one was to go near until the explosions subsided. The pararescueman then stated "that if they waited, that there might not be any wounded." He then asked for 3 volunteers and they crawled up toward the burning trucks. As they found wounded, they carried them back to the helicopter for evacuation.

The only minor problem encountered was the pararescue medical kit was not designed for a large number of casualties and as a result the pararescueman ran out of field dressings and had to use large 4 x 4 gauze.

e. WHAT WERE THE DEFICIENCIES?

The deficiencies in the HH-43 were identical to those that existed during the 1962-64 period. These deficiencies were thoroughly discussed in pages 41 through 44 of this volume; and to preclude redundancy, will not be addressed again in detail.

Although factory and in-theater modifications provided some

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performance and survivability improvements, the following were still considered as major deficiencies throughout the 1965-68 time period:

- (1) Range (B/F)
- (2) Instrument Flight Capability (B/F)
- (3) Armor Plating
- (4) Speed (B/F)
- (5) Single Engine (B/F)
- (6) Rotor Blade Deterioration (B/F)
- (7) FM Radio (B/F)
- (8) TACAN (B/F)
- (9) IFF (B/F) (Identification, Friend or Foe)

Action was taken in the field to correct the FM radio deficiency.

Although Southeast Asia Operational Requirement (SEAOR) procurement action was approved for installation of FM 622 sets in all HH-43's in SEA, actual delivery of all components had not been made by 31 March 1968. PACAF and ARRS approved a portable FM installation using an RCA RT 505/PRC-25 which provided a 30-75 MGS tunable capability. Initially, the set utilized an integral battery; but later utilized the aircraft power system.¹⁹

The deficiencies of the HH-43F were forcibly brought to light with the requirement for ACR missions into North Vietnam and Laos. The HH-43F was just not suitable for this mission in terms of the above deficiencies.

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2. WHAT ELSE WAS AVAILABLE?

The UH-1 series helicopters were available during this period and each model offered some advantages over the HH-43 in varying degrees. The B, D, E and F models were in production in January 1965 and the C model entered production in June 1965. Each had been designed for military use and provided armor protection for the crew; also, internal auxiliary fuel tanks could be installed. Other common factors were that each model had a 1000 pound lift advantage over the HH-43; and each model had space for three litters except the D, which had space for six. A comparison of speed and range revealed an average advantage of 30 Kts in speed and 40 NMs in range over the HH-43. The CH-3C was also available and would have provided increased capabilities in the accomplishment of each task. The twin engine design would have afforded a substantial improvement in survivability and lift capacity when compared to the HH-43. Other considerations that would have made it a more suitable vehicle were increased speed, longer range and the accommodation of more battlefield casualties. The CH-3C had proven to be a better fire suppression vehicle than the HH-43 and had the added capability of all weather operations.²⁰

A good example of the advantages that the HH-3C (CH-3C modified for combat SAR) would afford was presented to the Commander, MAC, in a briefing by Hq ARRS on 17 February 1965.²¹

This indicates the IFR radius of action of the HH-3C with 2 auxiliary tanks. Flying time to 400 miles out is 3+40 hrs. Within any part of RVN this aircraft from its home base should be able to be over a land recovery area within an hour or less. Forward staging or preplanned strip alert will cut this time. For example: Deploying from our proposed fixed base at Takhli, one HH-3C can give on the spot, 3 minutes or less airborne fire suppression rescue service at Korat. One advantage of the HH-3C and its deployment to advanced operating locations such as Can Tho or Pleiku, is that on the spot rescue coverage is available without unduly jeopardizing the main rescue force because of the poor airfield security at most advanced bases such as Pleiku.

This clearly indicated the ARRS enthusiasm that had been generated for the CH-3C by early 1965. PACAF's agreement with the ARRS position was reflected in their proposed SAR force structure in SEA, which was presented at the same briefing. This proposal recommended a total of 25 helicopters, 15 CH-3C's and 10 HH-43's.²²

WHY WAS IT NOT USED?

Although available, the UH-1 series helicopters would have required modification to a SAR configuration. The following negated any serious consideration in favor of the UH-1 helicopter:

- (1) The lead time required to perform the modification and to train personnel to operate the equipment.
- (2) The advantages to be gained over the HH-43 in total mission performance.

- (3) The number of HH-43's within the ARRS inventory on 1 January 1965.
- (4) The modification program for the HH-43 that was in progress.
- (5) The need and desire for the more versatile CH-3C.

The CH-3C was the aircraft that ARRS and PACAF preferred for SEA operations. In February 1965, this fact was presented to the Commander, MAC, by an ARRS briefing team when they stated:²³

We suggest that 6 CH-3C's from the curtailed "South Shore" tests could be combat modified by July of this year. Attendant resources, including trained personnel, could also be made available from the same source.

Other commands were also using the CH-3C to perform high priority missions such as "Pony Express" and SAC missile site support. These helicopters evidently could not be made available for the search and recovery mission in SEA. Two CH-3C's were received on a TDY basis in July 1965 and the rescue configured version of the aircraft were introduced into the rescue SEA inventory in December 1965; however, the nature of air operations and the corresponding rescue requirements demanded that these aircraft be assigned the ACR task. The number of HH-3's received did not permit the withdrawal of HH-43 resources from SEA, nor did it relieve them from their LBR and in-country ACR tasks.

3. ADDITIONAL CONSIDERATIONS: None.

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4. SUMMARIZE LESSONS LEARNED:

- a. The "B" model HH-43 was inadequate for the LBR mission in the combat environment.

Although the HH-43B performed better than expected in the wartime LBR role, the lack of armor protection did not permit the required freedom of operations. Small arms fire within the traffic pattern areas of Vietnam bases was not uncommon. The injury to personnel and the damage to equipment resulting from this lack of protection was not overwhelming, but any degree of prevention would have been an asset. If for no other reason, the peace of mind afforded the crew members would have warranted the modification. Since the enemy defense posture was unpredictable, it was difficult to determine how much resistance would be encountered during the next mission.

- b. The HH-43 was not equipped with adequate communication, navigation and identification equipment to permit effective prosecution of all assigned SAR missions.

The lack of FM radios in the HH-43 severely hindered communications with all U.S. Army and some U.S. Navy forces. This hampered mission prosecution in terms of not being able to

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receive information from these forces or to provide them with necessary instructions when they were involved in SAR efforts. It also prevented direct communications between the rescue helicopter and downed U. S. Army light aircraft.²⁴ This deficiency existed during the 1962-64 period, and action was taken to correct the problem. FM radios were requested for HH-43 helicopters and later approved. Portable FM equipment was installed as an interim measure, but was still in use as of end March 1968. This slippage in permanent installations resulted from the non-receipt of all required components.²⁵

Identification equipment in the form of an IFF transponder was needed to facilitate assistance from GCA, Ground Controlled Intercept (GCI) and other radar agencies. This assistance could have provided for the use of radar vectors to and from recovery areas, provided for radar traffic separation and a greater IFR capability. The HH-43 did not offer a good source for skin paints by radar units in use.²⁶

Tactical Air Navigation (TACAN) receivers would have expedited the locating of survivors. Bailout positions were frequently given by TACAN distance and radial, and the absence of such

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equipment required the helicopter crew to rely on map reading and DR navigation procedures to locate these positions. This equipment would have also improved the aircraft's IFR capability.²⁷

5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a and b, generally support, in the same alphabetical order, the lessons learned that have been listed above:

- a. LBR helicopters should be designed to operate in unfriendly surroundings.

The frequency of armed conflicts and near confrontations during the past several years has dictated the requirement for an in-being combat SAR force. Tactical aircraft have been the primary air arm in the active conflicts and the programmed primary weapon system in all Air Force contingencies. To provide the required LBR service for these forces, the LBR vehicle must operate from the same location. It cannot be assumed that small arms fire, in the vicinity of the airfield, will not be a factor; therefore, armor protection for helicopter aircrews and vital aircraft systems is mandatory.

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b. Rescue helicopters must be equipped to operate in an adverse weather environment and provided with radios that will permit communications with all other military aircraft.

This problem evolved from the apparent concept that LBR protection would be provided only to USAF aircraft in the close proximity to Air Force bases. This concept has proven to be erroneous; therefore, complete avionics installations are a must for LBR vehicles.

Coordination among the U. S. Armed Forces should be a prime consideration when developing and installing aircraft communications equipment. The communications equipment in each Service's aircraft must be compatible with that in the rescue vehicle; otherwise, the quality of the service rendered will be degraded.

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HARDWARE ANALYSIS

1965-31 March 1968

FOOTNOTES

1. Ltr, Col Edward Krafka to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, 24 Oct 68, p. 2.
2. 38th Air Rescue Sq. Historical Report, 1 July - 30 Sep 1965.
3. Msg, Hq ARS (ARODC 078-G) to Hq MATS (MAOCO/AT), 23 July 64.
4. Ltr, Capt Edmund W. Fischbeck, Jr. to Lt Col Crozier (ARXDC/Lt Col Crozier/5871), Subj: Corona Harvest Study, undated, p. 4.

Ltr, Major Charles R. Kay to ARXDC (Lt Col Crozier/5871), Subj: Corona Harvest Study, 3 October 1968, p. 1.
5. Ltr, Major David E. Allen to Hq MAC (ARXLR), Subj: Corona Harvest Study, 15 October 1968, p. 2.
6. Fischbeck, undated, op. cit., pp. 3-4.

Ltr, Major Ralph H. Bush to ARRS (ARXDC), Subj: Corona Harvest Study, 29 Oct 68, p. 4.
7. Ltr, Lt Col Archie R. Taylor to Hq ARRS (ARXDC/Lt Col Crozier/5871) Subj: Corona Harvest Study, 15 Oct 68, p. 3.
8. Ltr, Major Maurice G. Kessler to ARXDC (Lt Col Crozier), Subj: Corona Harvest Study, 28 October 1968.
9. Krafka, 24 Oct 68, op. cit., p. 4.
10. Briefing, Gen Estes and Col Brooks to CSAF, Subj: Combat Recovery Operations in Southeast Asia, 28 Oct 64, pp. 3-4.
11. Allen, 15 October 1968, op. cit., p. 2.

(HARDWARE ANALYSIS Footnotes - continued)

12. Project CHECO, Southeast Asia Report, USAF Search and Rescue in Southeast Asia (1961-66) Continuing Report, 24 October 1966, pp. 35-37.
13. Ibid., pp. 44-52.
14. Hq ARS Programming Plan 571, November 1965, p. 2.
15. Msg, Hq PARC (DOARX) 50016 Jan 65, to Hq ARS.
16. CHECO, USAF Search and Rescue in Southeast Asia (1961-66), op. cit., p. 66.
17. Ltr, Det 5/38 Air Rescue Squadron to Hq ARS (ARODC), Subj: Narrative Report, Mission 38 ARSQ 882 - 31 Aug 65, undated.
18. Ltr, Det 9/38 ARRSq to 3 ARRGp (3JSARC), Subj: Mission Narrative 9-38-24 - 24 Nov 67, 7 Dec 1967.
19. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 3 June 1967, p. 6.
20. Briefing, Hq ARS to Comdr MATS, Subj: Southeast Asia SAR Requirements (1965), 17 Feb 65, p. 7
21. Ibid., pp. 11-12.
22. Ibid., p. 4.
23. Ibid., p. 9.
24. Fischbeck, undated, op. cit., pp. 3-4.
25. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 3 June 1967, op. cit., p. 6.
26. Fischbeck, undated, op. cit., pp. 3-4.
27. Ibid.

PERSONNEL ANALYSIS

1965 - 31 March 1968

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WERE THERE ENOUGH PEOPLE?

During the period January 1965 through end March 1968, ARS personnel strength increased from approximately 150 to 1,229 of which some 335 were assigned in support of the LBR mission. New LBR detachments were activated continuously throughout the 1965-66-67 period to meet the ever increasing need for airborne fire suppression and ACR coverage. There was also considerable change in the ARS SEA organizational structure during these years which was necessary to provide better command and control of this rapidly increasing force.

During April 1965, Det Provisional Third was reactivated at Ubon AB, Thailand. Personnel and equipment to man this TDY unit came from PARC and ARS CONUS resources.¹ In May 1965, Det Provisional Fifth was established at Udorn AB, Thailand with personnel and equipment again coming from PARC and ARS CONUS resources.²

By April 1965, the Commander, Det 3, PARC had acquired seven helicopter detachments to command and control in addition to the JSARC

function with no staff to assist him. It was determined that due to the many command and control problems TDY units had to be converted to PCS units; therefore, reorganization was strongly recommended. On 14 June 1965, a MATS Special Order was published discontinuing all Provisional Units (TDY) in SEA effective 30 June 1965. New PARC detachments (PCS) were organized and designated at the same location effective 1 July 1965.³ On 25 June 1965, another MATS Special Order was published discontinuing the PARC detachments and activating the 38th Air Rescue Squadron with seven subordinate detachments (Det 1 through 7 of the 38th ARSq). This reorganization resulted in an increase of authorized strength for the squadron headquarters of 22 people.⁴

Effective 1 October 1965, two additional Rescue helicopter detachments were established. Det 9 of the 38th ARSq was organized at Pleiku AB, Vietnam; and Det 10 was organized at Binh Thuy. Personnel were requisitioned from Air Force resources in accordance with Air Force Manuals (AFM) 35-11 and 39-11.⁵ Since ARS was practically the sole source of required skills within the Air Force, the vast majority of personnel for these two detachments came from ARS CONUS personnel resources.

Det Provisional First of the 38th ARSq was designated and organized at Cam Ranh Bay AB, Vietnam effective 10 October 1965. Personnel and equipment were provided on a TDY basis from the resources of the 38th ARSq.⁶

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Personnel arrived on station 20 October 1965, and the unit became operational on that same day.⁷ This temporary detachment was discontinued, and Det 8 of the 38th ARSq was organized on 18 January 1966 at Cam Ranh Bay.⁸

As of January 1966, ARS units were designated as Aerospace Rescue and Recovery Service (ARRS) units.⁹ Another reorganization and redesignation of Rescue forces in SEA took place on 8 January 1966. The 3rd Aerospace Rescue and Recovery Group (3d ARRGp) was organized at Tan Son Nhut AB, Vietnam to control all Rescue forces in SEA under the command and control of the Pacific Air Rescue Center, herein after referred to as the Pacific Aerospace Rescue and Recovery Center (PARRC), Hickam AFB, Hawaii. The 38th Aerospace Rescue and Recovery Squadron was relieved of all mission responsibility, personnel and equipment that were not directly associated with the HH-43 LBR/ACR mission. A second squadron, the 37th ARRSq, and Det 1 of the 37th assumed mission responsibility for the Rescue fixed-wing and heavy lift ACR helicopters. Rescue personnel authorizations in SEA increased from 375 to 1,102 during FY 3/66.¹⁰ The rapid increase in personnel requirements was predominantly in other areas than the HH-43 units.

Detachment 1 of the 38th ARRSq moved from Nakhon Phanom AB, Thailand to Phan Rang AB, Vietnam on 18 March 1966. There was no change in authorized or assigned strength.¹¹

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Another LBR detachment was established at Tuy Hoa AB, Vietnam effective 18 February 1966. It was designated Det 11 of the 38th ARRSq. Required personnel were requisitioned per established Air Force policies.¹² The bulk of the personnel were provided from ARRS CONUS resources, with reporting dates in May through June 1966. The remaining personnel came from other commands and were scheduled for appropriate training en route to their overseas destination with late May 1966 reporting dates.¹³

Det 12 of the 38th ARRSq was designated and organized at Nha Trang AB, Vietnam in April 1966. The unit was programmed to become operational in June 1966. Personnel came from other commands as well as from ARRS CONUS units. Personnel arrived PCS during May and June 1966.¹⁴

The first commander of Det 12 experienced a considerable amount of difficulty in obtaining personnel as evidenced by the following comments:¹⁵

. . . . Getting the necessary firemen and medical technicians to support the unit proved to be extremely difficult. There had not been a request for qualified personnel in either category, prior to my arrival and there were not any qualified men assigned to Nha Trang. Acquiring firemen was almost impossible and I did not receive any assistance from 3rd Group when I asked for it. Through personal contact with a SMSgt in 7th AF Civil Engineering, I was able to get four qualified men sent to Nha Trang on TDY status and then after about five months, they were assigned there PCS. This was a major problem for the entire tour because there was no coordination at 7th AF to send qualified men to the bases where they were required. We never had more

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than four qualified men at Nha Trang and for one 30 day period, we only had two present for duty. We had neither the area or flying time necessary to train unqualified personnel. We flew missions for over three months without medical technicians because we could not get any qualified men. Eventually, we were able to get three pararescuemen assigned to fill this void. . . .

On 23 April 1967, Det 13 of the 38th ARRSq at Phu Cat AB, Vietnam became operational, coinciding with the activation of Phu Cat as an operational base.¹⁶ Since Det 13 was established and authorizations were in the October 1966 Military Airlift Command (MAC) Unit Manning Document (UMD), personnel could be requisitioned and trained under normal manning procedures. Experienced and trained personnel had arrived and were in-place prior to the operational date. This was the first ARRS SEA unit authorized with sufficient lead time to allow normal personnel manning actions.

Det 14 of the 38th ARRSq was organized at Tan Son Nhut AB, Vietnam on 14 August 1967. No additional personnel were required since it was merely a redesignation of the previously established LBR portion of the 38th ARRSq.¹⁷

Overall, the personnel picture for the Thailand based LBR/ACR detachments was excellent. Tab C, on page 36 of this document, reflects that in both the aircrew and support personnel categories the manning ratio was maintained at 100% during the period FY 4/64 through FY 2/66. Tab D, on page 39 of this document, reflects a similar personnel picture for the

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RVN based detachments covering the period FY 1/65 through FY 4/67.

These quarterly statistics should not be interpreted to mean that personnel shortages did not exist during this time, as certainly they did. However, as stated previously, personnel augmentation from CONUS and other overseas ARRS resources was required in order to maintain this 100% ratio.

In 1965 when the LBR/ACR detachments were converted from Provisional to PCS units, it became more difficult to maintain a manning ratio of 100%. To conserve these critical resources for future SEA assignments, aircrew and support personnel shortages were not filled with TDY personnel. Normal personnel requisitioning was not able to provide the personnel on a timely basis as evidenced by the manning ratio for the period FY 2/66 through FY 4/68. (Ref Tab H.)

2. WERE THEY THE RIGHT PEOPLE?

Replacements provided by TDY of personnel from other ARRS units maintained the unit experience at a fairly high level. This did not necessarily hold true after conversion to PCS status as indicated by the following resume of a detachment commander:¹⁸

Authorized AFSC and Rank
A 43170 TSgt

Assigned AFSC and Rank
A 43170 TSgt. This man had never worked on the HH-43 or had not received any training prior to coming to SEA. In addition to his lack of useful helicopter maintenance experience, he had never been trained as a crew member for hoist operation.

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HARDWARE		TASK: TO PROVIDE LER																SHRED-OUT HH-43B/F			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HH-43B	0	-	-	-	-	-	-	0	12	17	20	20	20	20	20	20	20	20	20	20
	HH-43F	0	-	-	-	0	6	6	6	6	6	8	8	8	8	8	8	12	12	12	12
PROGRAMMED	HH-43B	0	-	-	-	-	-	-	-	0	11	14	14	18	18	18	18	21	21	21	21
	HH-43F	0	-	-	-	-	-	-	0	2	5	5	5	5	7	7	7	11	11	11	11
ACTUAL	HH-43B	0	-	-	-	-	-	-	-	0	11	17	17	16	16	18	19	22	23	25	25
	HH-43F	0	-	-	-	-	-	-	-	0	5	4	4	4	6	5	5	9	7	7	7
ATTRITION	HH-43B/F	0	-	-	-	-	-	-	-	-	-	-	0	1/B	0	-	-	-	-	-	-
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	-	-	-	-	-	0	81	93	93	93	100	106	106	106	106	131	135
	SUPPORT	0	-	-	-	-	-	-	-	0	85	91	91	91	96	105	105	105	105	121	121
ASSIGNED	AIRCREW	0	-	-	-	-	-	-	-	0	76	90	93	93	97	104	106	105	123	127	128
	SUPPORT	0	-	-	-	-	-	-	-	0	85	91	91	91	93	99	102	100	119	122	122
MANNING RATIO - %	AIRCREW	0	-	-	-	-	-	-	-	0	94	97	100	100	97	98	100	99	116	95	95
	SUPPORT	0	-	-	-	-	-	-	-	0	100	100	100	100	97	94	97	95	112	97	98
MATERIEL																					
O/R	HH-43B	0	-	-	-	-	-	-	-	0	76.7	79.7	80.4	87.4	81.0	83.4	83.2	90.0	87.1	88.2	85.6
	HH-43F	0	-	-	-	-	-	-	-	0	80.3	87.1	84.5	87.8	87.2	89.5	87.5	83.8	79.4	88.1	87.1
NORM	HH-43B	0	-	-	-	-	-	-	-	0	5.8	9.1	10.4	6.8	10.1	10.3	10.1	6.2	8.7	6.1	6.5
	HH-43F	0	-	-	-	-	-	-	-	0	5.4	5.5	8.5	6.2	4.7	6.9	5.9	13.7	13.1	6.1	8.5
NORS	HH-43B	0	-	-	-	-	-	-	-	0	17.5	11.2	9.2	5.8	8.9	6.3	6.7	3.8	4.2	5.1	3.5
	HH-43F	0	-	-	-	-	-	-	-	0	14.3	7.4	7.0	6.0	8.1	3.6	6.6	2.5	7.5	5.5	4.1
STATISTICAL OPS DATA																					
SCRAMBLES	HH-43B	0	-	-	-	-	-	-	-	0	1934	2161	2515	2845	2429	2321	2737	2821	3380	3625	3672
	HH-43F	0	-	-	-	-	-	-	-	0	25	196	266	240	501	456	550	1588	1752	1561	1638
SAVES	HH-43B	0	-	-	-	-	-	-	-	0	49	3	11	13	30	24	34	40	46	56	72
	HH-43F	0	-	-	-	-	-	-	-	0	4	2	34	25	13	35	24	41	44	53	25
FSK	HH-43B	0	-	-	-	-	-	-	-	-	-	-	0	2	1	0	2	0	5	2	2
	HH-43F	0	-	-	-	-	-	-	-	-	-	-	-	0	1	1	0	0	2	3	1

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Tab H

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A 43150 A1C A 43150 A1C. This
airman was from a SAC, HU-1F unit and had no training
or experience on the HH-43. In addition, he had never
made a hoist pick up as a crew member.

A 43150 A1C A 43130 A2C. This
airman came from an LBR unit in the states, but had
failed his five level SKT twice and had been removed
from training. He was no more than a warm body,
filling a slot on the UMD.

43170 SSgt 43130 A2C. This
airman came from a CH-3 unit in MAC. He had been on
OJT about 18 months, but did not bring his records with
him. After a number of letters and messages to his
previous unit, they replied that they could not locate his
records or give us any information on his previous
progress. He was withdrawn and then re-entered into
training. Another warm body.

43150 A1C 43130 A2C. This man
came from the same CH-3 unit as the man above. Same
story except that he had been on OJT for about 28 months,
and the losing unit never did acknowledge any of the
inquiries. Neither man had ever been tested for the five
level and both stated that they never had any formal OJT
training.

The experience level varied greatly between detachments. As
evidenced by the comments above, some detachments had a low experience
level while others had as many as five mechanics that were seven level.
The 3d ARRGp Commander during 1966-67 made many inter-unit transfers
to balance the experience level throughout the 38th ARRSq. The situation
greatly improved after this action.¹⁹

3. WERE THEY ADEQUATELY TRAINED?

In general, the training and qualification of personnel received by ARRS LBR detachments in SEA was adequate. The following exception applied:

As stated previously, some replacement personnel arrived without having completed prerequisite training courses and without prior experience. This necessitated on-the-job training by the LBR detachments, which created a heavy burden for the already busy detachment personnel. Normal upgrade training did not create a problem, but OJT of individuals not acquainted with the HH-43 required much more time and closer than normal supervision.

Training requirements for detachment personnel were met as well as possible under the circumstances. Flying training, ground training and collateral training were scheduled so as to meet at least the minimum requirements, though actual accomplishment of all training was impossible due to the circumstances under which the detachments operated. Ground training requirements were successfully met with the exception of Communications Instructions for Reporting Vital Intelligence Sightings (CIRVIS) training, special communication procedures and visual approach indicator training.²⁰

4. WAS THE REPLACEMENT/ROTATION PROGRAM ADEQUATE?

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The rotation/replacement policy for ARRS personnel in SEA was considered adequate for the time period 1965 - 31 March 1968. There were, of course, instances where the system broke down and personnel were not rotated on time. For example:

Upon completion of the Korat Detachment TDY on 14 January 1965, six airmen were unable to rotate with the remainder of the personnel due to lack of action by the Personnel Center at Randolph AFB, Texas. Various messages received indicated that the Personnel Center had assumed that PACAF would automatically provide replacements. PACAF had done nothing since they didn't know that the firemen and medical technicians, which these six airmen were, would require replacement. ARRS was not responsible so likewise did nothing. The blow to morale was considerable. The detachment deployed as a unit, worked as a unit and should have returned to the CONUS as a unit. Future deployments might contain the same elements of personnel non-action and well advanced replacement requests should be a matter of prime concern.²¹

5. DISCUSS ANY PERSONNEL DEFICIENCIES:

In conjunction with requisitioning of personnel, required training prior to arrival at a new unit was necessary to insure initial assignees or replacements were properly trained for their new job. These training requirements were submitted by the gaining unit on an Air Force Form 403

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through command channels. At each level of command, the submission, non-submission, or accuracy of data was subject to the human error element, resulting in some personnel arriving at their new unit without completion of prerequisite training. If sufficient qualified personnel were assigned to the unit when the untrained individual arrived, the commander had the option to return the individual to the CONUS for training or to train him on-the-job. The ARRS LBR detachments in SEA had austere authorizations; therefore, rather than lose a person completely and operate with a shortage, the commander normally trained unqualified new comers on-the-job. Required training, prior to reporting to an ARRS unit, was identified for each AFSC, officer and airmen. Such prerequisite en route training should be programmed into the computerized Personnel Data System at Air Force and major command level, for each AFSC, by command. This would eliminate the human error element now existing thus reducing the present heavy workload at unit level. The initial assignment cards would contain codes identifying all required training and servicing Consolidated Base Personnel Offices (CBPO's) could determine by personal interview and screening of available personnel data whether all or only part of the training would be required on an individual basis. This would eliminate, to a great degree, duplication of training which occurred quite frequently. ARRS, working closely with MAC (MAPDC), assisted in preparing such a proposal to United States Air Force Military Personnel Center (USAFMPC) for inclusion in AFM 36-11 and AFM 39-11.

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A forthcoming change to AFM 39-11 will contain the suggested training identification codes; inclusion of the suggestion in AFM 36-11 and AFM 30-3 is still pending USA FMPC decision.

The normal personnel lead time for requisitioning officers was nine months and for airmen, six months. Out-of-cycle requisitions resulted in arrival of personnel in SEA approximately four to five months after submission of the requisitions. The rapid buildup of ARRS units in SEA often resulted in establishment of units manned by TDY personnel from non-SEA ARRS units until PCS personnel could arrive. Under limited wartime conditions, new units were created quickly and required to be operational very soon after they were established. Peacetime PCS assignment selection policies precluded rapid assignment fulfillment required by a limited war situation such as SEA.²²

In April 1968, Hq MAC (MAPDC) assumed manning responsibility for ARRS SEA units. Personnel requisitions were prepared at MAC from current unit manning documents and personnel data from the Personnel Data System (PDS). USA FMPC filled these requisitions by allocating line numbers to MAC and levying major commands to provide specified persons having the required AFSC.²³ Many qualms existed concerning the practicality of using this system before known existing discrepancies in the Personnel Data System could be corrected. The validity of the concern was proven in late

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1968 when the first personnel selected under this system began to arrive. Some personnel arrived several months late, and some failed to arrive at all. Meanwhile, personnel in SEA units rotated to other non-SEA assignments. The SEA units had names or line numbers of replacement personnel assigned to them, but not the total required personnel to accomplish the work. MAC did not requisition personnel because the personnel manning data showed SEA units to be 100% manned. Units began to complain about personnel shortages due to late reporting and "no shows" (personnel scheduled into a unit who never reported for duty). TDY assistance was provided from non-SEA ARRS resources, and priority out-of-cycle manning actions were implemented where critical shortages existed. The reasons for the "no shows" were determined after much time and effort on the part of personnel at all levels of command (detachment up to Hq MAC). Late reporting was due to individuals being granted a delay in reporting or being released from a SEA assignment due to a justified reason and a replacement being furnished. The "no shows" were due to individuals being released from the SEA assignment due to a justified reason but no replacement being furnished. In both instances, correction of reporting dates or withdrawal of names or line numbers from the computerized Personnel Data System was not being accomplished. Head count verification of personnel assigned was necessary to determine the number of personnel by grade, name and AFSC that were assigned to each unit. This data was collected, compiled and submitted to MAC by

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ARRS (ARPDC) so out-of-cycle manning requisitions could be submitted.

All ARRS units were advised to closely monitor the personnel data products provided them by their servicing CBPO, to take prompt action through their servicing CBPO to correct all erroneous data on these PDS products, to aggressively follow up on required corrections and to advise ARRS (ARPDC) within a reasonable period of time if their efforts were non-productive. Hq MAC would be advised if servicing CBPO's failed to provide the necessary support to the units.

Units had to be manned on a TDY basis when the following situations occurred: ²⁴

- (1) Replacements reported late and PCS incumbents had completed their SEA tour and departed.
- (2) Scheduled replacements were released from SEA assignments due to priority diversion or other valid reasons without selection of other individuals to take the SEA assignments. PCS incumbents would depart their SEA unit upon completion of the SEA tour resulting in personnel shortages.
- (3) Unprogrammed personnel requirements were created by sudden establishment of new units or sudden expansion of already established units.
- (4) Slippage or cancellation of previously established prerequisite training for replacement or initially assigned personnel.

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The above situations not only created a personnel deficit in the non-SEA units providing the required TDY assistance but also reduced future experienced SEA personnel resources. The TDY time in SEA was deducted from the required one year tour when they were selected to perform their first involuntary SEA assignment at a future date.

Inaccuracies existed in available personnel data resulting in some individuals being sent TDY to SEA on initial unit deployments only to be returned shortly after arrival for separation from the service. This was due to expiration of their enlistment, for humanitarian reasons or for PCS assignment to an overseas location.²⁵ The individuals concerned failed to advise their supervisors of their ineligibility to accompany the unit or the supervisors failed to advise the next higher echelon of command so replacement could be made.

In many instances, TDY units in SEA failed to notify Hq ARRS that unscheduled replacements were required until it was too late to furnish a replacee prior to the returnee's departure. This resulted in temporary manning shortages and short notice TDY. Under such circumstances the Air Force/MAC policy of 30 days notification prior to physical departure of individuals from their duty station was waived to prevent LBR detachments from becoming non-operational.

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The quick change in unit designations during 1965 and 1968 resulted in quite a few personnel already en route trying to report to a nonexistent unit in SEA. It was several months before corrected orders could catch up to the individuals concerned; and by that time, the only purpose served was personnel accounting. TDY personnel had to be replaced by other TDY personnel until the PCS replacements were finally located or they located the proper unit. Redesignation of units should require a minimum lead time of four months to prevent repetition of the confusion which occurred. Authority to realign airmen personnel within the 38th ARRSq was granted to the Commander to provide necessary flexibility.²⁶

Limited LBR experience reduced the effectiveness of aircrew members, and three-fourths of the non-rated crew members (firefighters and medical technicians) required initial qualification at the SEA LBR detachments.²⁷ These non-rated aircrew members were provided by the host base supporting each LBR detachment.

The rapid buildup of HH-43 detachments in SEA allowed no time for procurement of personnel or equipment and training of personnel in equipment and procedures used by ARRS. HH-43 LBR detachments were deactivated in the CONUS and activated in SEA. The overseas versus CONUS personnel imbalance created a replacement rotation situation that ARRS CONUS units could not support. Constant loss of experienced HH-43

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helicopter pilots, flight engineers and helicopter mechanics from CONUS detachments required replacement by inexperienced, unqualified personnel and considerable training, both formal and on-the-job. The time required to requisition, identify and formally train replacement personnel in ATC courses resulted in shortages, lower experience level and reduction in available productive man-hours in CONUS units. Since the number of HH-43 personnel required in the CONUS was less than the number required overseas, many experienced personnel were not returned to ARRS CONUS units upon completion of their overseas tour. The situation above was a continuing process and would exist until an overseas - CONUS balance was obtained. The experience level of personnel replacements furnished to the SEA units constantly decreased year by year due to Air Force policy of no individual involuntarily returning for a second SEA tour before all personnel with the same skill completed the first SEA tour.

6. WHAT WERE MAJOR FACTORS AFFECTING MORALE?

Air Force policy until late 1967 was to provide SEA returnees an assignment to their base of choice insofar as possible. Every effort was made to fulfill the policy at all levels of command. Initially, no problems were encountered. As more personnel became eligible due to expansion of USAF participation and continuance of the conflict beyond the anticipated end of hostilities, personnel requirements at preferred bases and those in the

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general geographic areas were exceeded to such a degree that the base of choice policy had to be withdrawn. In March 1967, only 19% of the Rescue people in SEA were receiving their base of choice upon completion of their tour.²⁸

ARRS and MAC airmen and non-commissioned officers in SEA units were receiving notification of their CONUS assignments as much as 30 days later than their PACAF contemporaries on the same base.²⁹ The primary cause was determined to be due to the units in SEA being geographically separated from the servicing CBPO, originally at Orlando AFB, Fla. and subsequently transferred to Hickam AFB, Hawaii in May 1967.

There were a great many complaints from ARRS and MAC personnel in SEA in 1967 concerning the servicing of their records by the CBPO.³⁰ The main concern was accurate and timely inclusion of items in their personnel record data that affected promotion and reassignment. Since the CBPO was geographically separated from the SEA units, personnel could not personally check their records to ascertain that these items important to their Air Force career and personal livelihood were accurate and up-to-date. Due to the numerous complaints, arrangements were made for the 61st Military Airlift Wing CBPO to accomplish individual personnel records review although an Air Force waiver to this requirement was in effect. Further records dispersal to CBPO's collocated with ARRS SEA units was

scheduled to take place from October 1968 through January 1969.³¹

A common complaint among SEA personnel was that all SEA returnees, except Air Force members, arrived at CONUS Port of Aerial Embarkation (PAE) bedecked with their newly won decorations. Air Force personnel, who almost exclusively arrived at CONUS PAE's in the 1505 uniform, did not enjoy the same prestige when greeted by families and friends upon arrival.³² The recommendation was made to USAF to allow optional wearing of ribbons on the 1505 uniform. This inequity was corrected, and ribbons were authorized to be worn on the 1505 uniform.

Combat pilot status had its impact on morale as evidenced by the following statement from an officer located at Takhli:³³

There was one group however that felt they were badly used. These were the pilots with several years and two or three thousand hours flight experience who were limited to co-pilot status by the requirement for 300 hours of helicopter time before upgrade to Rescue Crew Commander.

This meant that a great number of pilots would not be eligible to upgrade to crew commander status during their entire tour of duty in SEA. The requirement had been levied by ARRS; however, in 1968 it was reduced to 150 hours of helicopter time provided the individual had at least 1,000 hours total time.

7. WHAT WERE SIGNIFICANT PERSONNEL ACCOMPLISHMENTS?

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Newly established units were manned in time to meet scheduled operational dates although TDY was occasionally required until PCS personnel could arrive.

Morale problems were resolved as they became known.

Personnel planning, detailed flow charts, careful scheduling of correctly identified skills, number of personnel and training required for new or expanded units was accomplished.

Special selection criteria for unit commanders in SEA was established.

Despite the deficiencies, limitations and inflexibility of the Personnel Data System, ARRS managed to keep Rescue SEA units operational by TDY and manual manning checks as a basis for out-of-cycle requisitioning.

Six thousand one hundred and fifty-five (6,155) decorations, ranging from the Medal of Honor to the Air Force Commendation Medal had been awarded to ARRS personnel in SEA as of 30 September 1968.

8. ADDITIONAL CONSIDERATIONS: None.

9. SUMMARIZE LESSONS LEARNED:

a. Quick changes in unit designation created unwarranted confusion.

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The quick redesignation of units during 1965 and 1968 resulted in quite a few personnel already en route trying to report to a nonexistent unit in SEA. Several months passed before corrected orders caught up with individuals concerned; and by that time, the only purpose served was personnel accounting. TDY personnel had to be replaced by other TDY people until the PCS replacements were finally located or they located the proper unit.

b. Qualified personnel, with specialized aircrew skills (firemen and medical technicians) required for effective accomplishment of the LBR mission were, not provided by the host base on a timely basis.

This was a major problem with some of the LBR units in SEA in that they did not have allocated flying hours to provide training once these personnel were assigned. In at least one detachment, medical technicians were not available for over a three-month period.

c. The established practices, procedures and policies of the Personnel Data System did not provide reliable initial or replacement personnel assignment and en route training results.

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d. The established Personnel Data System was inflexible in that it took too long to complete personnel manning actions required by sudden change in authorized strength of a unit or quick establishment of a new unit. Another aspect of the inflexibility was the long time it took to eliminate identified errors from the memory banks of Command Computers at all levels resulting in false manning figures and other erroneous data.

e. Although prerequisite training requirements for ARRS aircrew and maintenance personnel were identified in MAC and Air Force directives, personnel still arrived too frequently in SEA unqualified and untrained.

f. The six month airman personnel requisitioning cycle did not provide sufficient lead time for ARRS aircrew members being assigned to SEA. An eight month requisitioning cycle was required due to travel time, leave and required en route training. Frequent assignment reclama by selected individuals created further delay of personnel reporting to their SEA units.

g. Until the Personnel Data System proved effective in complete support of Field Units, qualified Personnel Technicians and Specialists were required in each operating unit to assure proper corrective personnel actions were initiated, followed up and completed. This capability was required to purify personnel data, particularly in the airman manning area.

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h. ARRS had the only LBR aircrew and maintenance personnel resource in the Air Force. The CONUS LBR detachments did not have sufficient personnel to provide a PCS rotational base for SEA and other overseas LBR units.

10. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a and b, support in the same alphabetical order, the lessons learned that have been listed above. The recommendation listed in subparagraph c supports the lessons learned covered in subparagraphs c through h.

a. That redesignation of units require a minimum lead time of four months to prevent repetition of the confusion which occurred.

b. Closer coordination should be maintained between the ARRS SEA commander and the host base commander to ensure that qualified firemen and medical technicians are available to support the LBR mission. The host base commander should take necessary action to ensure that additional manpower has been authorized over and above normal base functional requirements. In addition, the host commander must ensure that properly qualified personnel have been requisitioned with reporting dates to coincide with the establishment of the LBR unit.

c. The Personnel Data System was established to provide accurate

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personnel data more quickly to all levels of management. During the initial phase of implementation of this system, the inaccuracy of data available to middle and top management levels required a dual manual and mechanized capability to allow correction of erroneous data and establishment of improved procedures, policies and systems. The system would also have to provide sufficient accurate personnel data for sound management decisions. As the Personnel Data Systems became more accurate and effective, the Personnel Technicians and Specialists in each unit could be reduced and ultimately eliminated. The established concept of eliminating personnel authorizations from units upon collocation of personnel records in a CBPO on the same base as the unit eliminated the unit capability to help itself. This concept was based on the CBPO assuming all personnel functions of the unit. CBPO's were not successful in correcting or identifying erroneous personnel data so higher management had to levy this responsibility on the unit commander. With qualified personnel assistance in the units, quick proper action could have been taken to identify and eliminate errors and would have required personnel data for higher level management decisions until the PDS attained the required degree of reliability.

The six month airman personnel requisition cycle should have been made flexible enough on a permissive basis to permit submission of requisitions seven or eight months prior to the reporting month at the gaining unit. This

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would hold true only when the en route training requirement was of sufficient length to warrant such action.

The Personnel Data System required revision to permit a much more rapid PCS manning action response required when a new unit was quickly established and when a sudden increased authorization occurred in an established unit. This situation happened several times in SEA as well as in other areas. Out-of-cycle requisitions, submitted outside of the PDS, were used to supplement the established system; but TDY personnel from command resources were still required. A minimum of 90 days and a maximum of 120 days from submission of requisition to reporting of personnel at their designated unit was desirable. To ensure selection of qualified personnel in such a short time period, an improved system of identifying special skills or qualifications was mandatory. Special Experience Identifier (SEI) Codes were established in AFM 300-4. Early identification and input into the PDS of SEI's Air Force wide would have provided the necessary data, to ensure selection of properly qualified personnel.

Receipt of and timely notification of en route training required by personnel selected for assignment to overseas units was a continuing problem. The initial assignment cards should have contained the gaining command's required prerequisite training for that specific AFSC. A copy of the assignment card would go to Air Training Command who would automatically

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establish quotas in the required courses. The servicing CBPO, upon receipt of the assignment card, would review the assignee's records and if all or some courses had already been completed, promptly cancel those courses. Training prerequisites would be provided by each command for inclusion in AFM's 36-11 and 39-11. Necessary training codes were identified in AFM 300-4. This would have eliminated the present cumbersome system which required individual units to manually submit training requirements on AF Forms 403 which were then consolidated at several levels of command and finally submitted to Air Force.

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PERSONNEL ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. MATS S.O. G-39, 12 Apr 1965.
2. MATS S.O. G-47, 3 May 1965.
3. MATS S.O. G-71, 14 June 1965.
4. MATS UMD for 38 ARSq, 1 Oct 1965.
5. MATS S.O. G-123, 15 Sept 65.
6. MATS S.O. G-131, 7 Oct 1965.
7. 38 ARSq History, 1 Oct thru 31 Dec 1965.
8. MATS S.O. G-2, 3 Jan 1966.
9. MATS S.O. G-163, 3 Dec 1965.
10. MAC UMD, 3 ARRGp, April 1966.
11. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commander's Letter, 5 Apr 1966, p. 3.
12. MATS S.O. G-2, 3 Jan 66, op. cit.
13. Ltr, 3d ARRGp (RGCO), 5 Apr 1966, op. cit., p. 3.
14. Ltr, 3d ARRGp (RGCO/Beall/4313) to Comdr ARRS, Subj: Commander's Letter, 4 June 1966, pp. 1-2.
15. Ltr, Det 5 AARRC (Major Ralph H. Bush) to Hq ARRS (ARXDC), Subj: Corona Harvest Study, 29 Oct 1968, p. 1.
16. 3d ARRGp History, 1 April thru 30 June 1967.

(PERSONNEL ANALYSIS Footnotes - continued)

17. 3d ARRGp History, 1 July thru 30 Sept 1967.
18. Bush, 29 Oct 1968, op. cit., p. 2.
19. Ibid., p. 3.
20. Ltr, Capt Philip S. Prince (Det 10, EARC) to Comdr EARC, Subj: End of Tour Report, 18 January 1965, pp. 14-15.
21. Ibid., p. 16.
22. Air Force Manuals 30-3, 36-11, and 39-11.
23. Msg, MAC (MAPMAAF) 24200 Apr 68, Subj: Oversea Requisitions and Enroute Training.
24. Ltr, Hq MAC (MACCS), Subj: Action Items Commander's Pacific Trip, 7-27 March 1967, 20 April 1967, w/1 Atch, Atch 1 - p. 6.
25. Prince, 18 Jan 1965, op. cit., p. 15.
26. Msg, Hq MATS (MAPAPP) 102355 Z Nov 65.
27. Ltr, Capt Edmund W. Fishbeck, Jr., to ARXDC (Lt Col Crozier/5871) Subj: Corona Harvest Study, undated, p. 3.
28. Ltr, Hq MAC (MACCS), 20 April 1967, op. cit., Atch 1 - p. 3.
29. Ibid.
30. Ibid., Atch 1 - p. 11.
31. Ltr, Hq MAC (MAPDSP/MSgt Hamm/5615) to 61 MAWg (61P), Subj: Records Dispersal Schedule Actions, 5 Sept 1968.
32. Ltr, Hq MAC (MACCS), 20 April 1967, op. cit., Atch 1 - p. 1.
33. Ltr, Det 8 AARRC (Capt Gordon L. Hall) to Hq ARRS (ARXDC), Subj: Resume of SEA Tour, 21 Oct 1968, p. 2.

SUPPORT ANALYSIS

1965 - 31 March 1968

1. HOW DID SUPPORT ACTIVITIES OR FUNCTIONS SIGNIFICANTLY
INHIBIT OR ENHANCE THE ACHIEVEMENT OF THE TASKS?

a. FACILITIES:

Facilities in SEA generally improved throughout the 1965-68 period. The initial influx of large numbers of personnel and equipment into an area, primitive by U.S. standards, naturally made initial facilities primitive by the same standards. The time required to receive essential housekeeping equipment and building materials could not be ignored. Nor, could the ensuing requirement be ignored for each person and unit to direct all available energy toward the improvement of personal well-being. Recognition of this fact by one of the first PCS ARRS commanders contributed significantly to a general improvement trend. His observations were: that many provisional unit commanders had exercised little or no initiative toward improving their residential environment; that requirements were not made known to the proper authority; and that self-help had contributed to facility improvement and promoted the approval of facilities which otherwise would not have been obtainable.¹

The validity of this reasoning and the results of the subject

commander's follow-up actions were reflected in many letters from Rescue personnel who served in SEA during 1965-68. The following were extracted from those letters:

Takhli;²

When we arrived we had a little room in the Fire Department. Our equipment consisted of about four metal chairs, a counter and a big wooden cable drum. A few days after our arrival we had a field desk and a very short time later we had regular office equipment. . . . We were able to get our pilots together in one hutch and have a telephone installed which greatly decreased our response time. We were also able to get our enlisted troops together in one room in the barracks. Our fireman stayed down at the firestation so the alert fireman acted as a CQ.

Udon and Takhli;³

Helo Operations was established in a very small room in the Base Operations Building. An abandoned and condemned mess hall was quickly and inexpertly rehab'd through self-help to serve as crew quarters. A chance meeting with the Thai Base Commander resulted in acquisition of hangar space for helo maintenance (the only USAF helos hangared in all of SEA at the time).

Nha Trang;⁴

The building that we had been scheduled to occupy was already in use and all we were able to get were two, 16 x 32 tents. Money was available to build facilities, but the serious problem was a shortage of real estate. Nha Trang was a VNAF base, shared by the USAF and USA and there was no room for expansion. Eventually, we acquired the land where the rescue facilities are now located at Nha Trang and moved into those buildings in

Dec 66. The Commander, 14th ACW, personally expedited the construction of those facilities, in spite of objections to the location by 7th AF. Had it not been for him, we would have probably remained in tents for the entire tour.

Pleiku;⁵

After securing quarters at Pleiku, there were a few problems that had to be overcome. The unit was housed 3 miles from the flight line with no assigned transportation from the Air Force. With nothing available from the Air Force, a flight suit was traded to the Army Motor Pool Sergeant and we had a 2 1/2 ton truck at our disposal. . . . Scrounging was a prerequisite to survival, my men were unparalleled in this dimension. At one time Det 9 was the only source of toilet paper for the base, thus, our first rescue was performed. . . . Since the base civil engineers were busy building facilities to house incoming troops, we had to build our own operating facility. This was done with 7000 + manhours of labor provided by Det personnel. . . . Field Maintenance support was not available at Pleiku so we made contact with the Army helo unit station at Holloway Field 5 miles away. They provided manpower, parts and the other items without delay and we traded supplies on our dash eleven engines. We would have been hard pressed for adequate maintenance support without the outstanding services rendered by the Army.

Phan Rang and Pleiku;⁶

The problem areas encountered at Det 1, Phan Rang AB, RVN, were those same problems found in the activation of any unit in a remote combat area. Spare aircraft parts were few, operating facilities were constructed from scrounged lumber, all of the work being done by the assigned and attached personnel.

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Udorn:⁷

Facilities were the biggest headache for the LBR. . . . Facilities were shared with the Jolly Greens until the LBR moved into its own facilities in Apr 67. The new facilities were completely revamped, inside and out, by a self-help project. A new concrete pad for both helicopters was constructed. No hangar facilities were available and three hootches were used for maintenance and supply storage. Our problems encountered with inadequate facilities were, I presume, no more than any other detachment in SEA. . . . Close liaison with base officials, a lot of hard work and a couple of good scroungers proved invaluable.

Korat:⁸

Facilities - substandard at first, but outstanding support by host base resulted in best facilities in South East Asia. (Ref Tabs I and J.)

Bien Hoa:⁹

The more Rescue proved itself by self-help, the more assistance was forthcoming from the Base Commander.

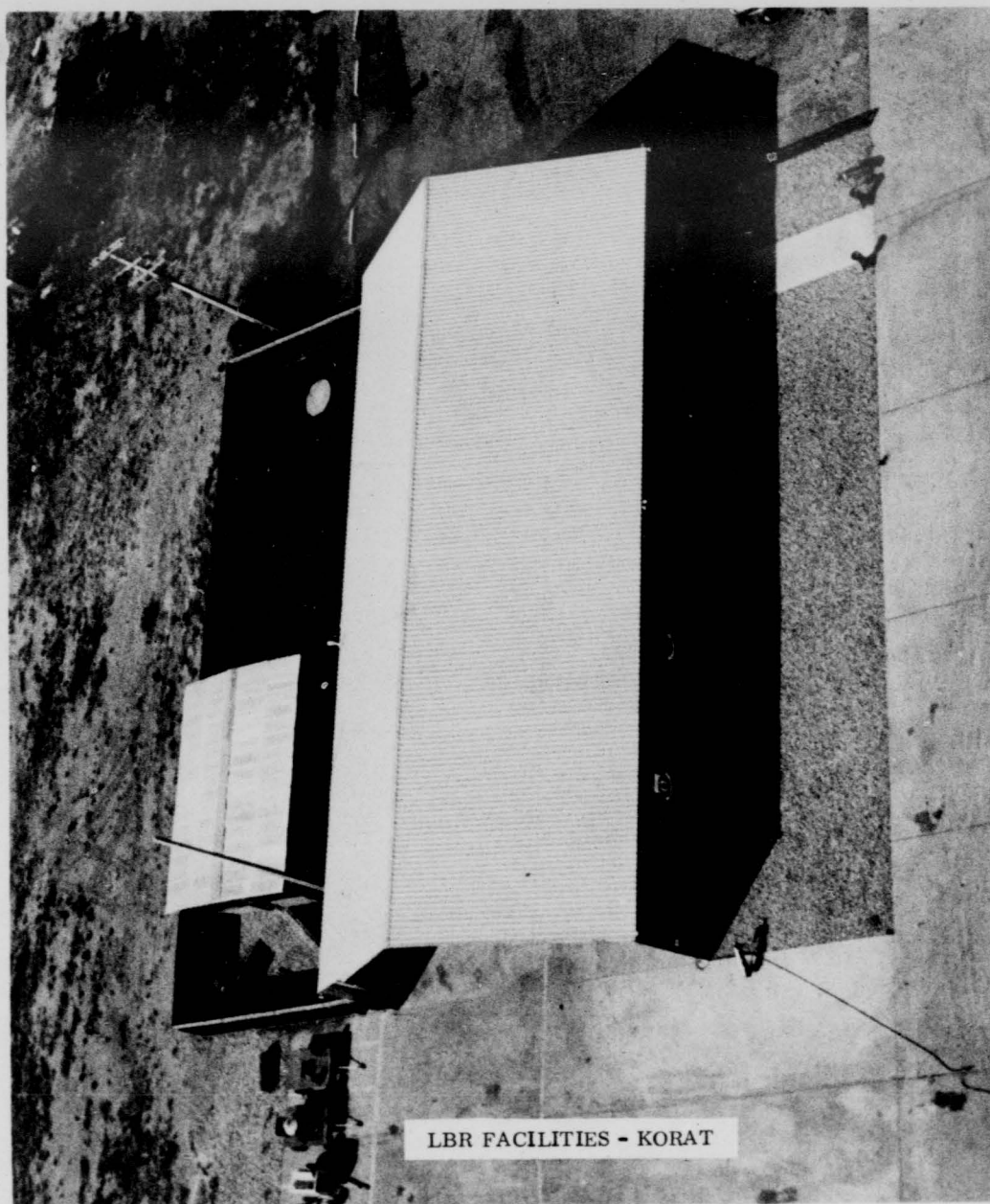
Ubon, Takhli, Korat and Pleiku:¹⁰

I have visited all units now and am real pleased with progress being made in just about all areas of endeavor. At Ubon they have just moved into a new hutment and about half of it is airconditioned for a crew lounge and administrative area. At Takhli they have started building a large leanto alongside their hutment which will allow them to discontinue operating from the many Conex boxes. At Korat their biggest problem is dust control in their landing area. About the most

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LBR FACILITIES - KORAT



LBR FACILITIES - KORAT

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Gung-ho outfit is the one at Pleiku. They have continued to add to the building that they started from scratch, now they have a macadam packing area and have built such an outstanding bunker that the Wing Commander told me he would probably take it over for a command post in the event of an attack. I am extremely proud of this group, who are all TDY, including one officer from Thule.

The above indicated that facilities during 1965-68, though not on a par with "Mother's house," were tenable and steadily improving. Lack of improvement would have reflected a lack of individual initiative and extremely poor supervision.

b. LOGISTICS:

The rapid buildup of HH-43 LBR detachments in late 1964 and throughout 1965 naturally imposed an added logistical burden. The long Lines of Communication (LOC) could not be overcome immediately, and time was required for in-country stock levels to reach a desirable level. The mission support kits deployed to support the aircraft were inadequate, and justifiably so; they were not developed to support operations in a wartime jungle environment. Acceptable in-commission rates were initially maintained through the judicious use of MSK spares, close cooperation with other helicopter units and many hours of hard work by maintenance personnel.

As time cured many of the logistics headaches, the establishment

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of supply administration and discipline cured others. Making requirements known to the proper authorities and the proper planning for future developments cured more.

Before adequate stock levels were attained, a weekly telephone call from Hq Det 3 in Saigon to the ARRS supply liaison officer in Warner Robins Air Materiel Area (WRAMA) expedited the acquisition of necessary parts and supplies. Also, through coordination with the Director of Maintenance, 2d AD procedures were established for aircraft to obtain extensive repair by in-theater depot detachments.¹¹

Some factors that compounded supply problems were pointed out by an officer who served as 3d ARRGp Chief of Maintenance during this period. He also offered some suggestions for future operations:¹²

. . . . Additional factors were lack of knowledge of location of spares. Since automatic distribution of spares was made to many bases prior to establishment of adequate supply controls, a constant requirement existed to physically check storage areas to insure that items were actually not available. For example, at one time I recall personally locating 3 H-43 transmissions and two engines in open storage at Udorn, although stock records indicated zero balances. When conditions above are multiplied by the myriad of components installed on helicopters, the problem is magnified. The majority of these type problems were encountered at the more outlying bases. Recommend that in the future when operations are required to be conducted from bare base concept that a completely adequate mission support kit accompany the unit. Also supply type personnel should

be assigned to the unit.

The officer who activated and commanded the LBR detachment at Tuy Hoa AB, and subsequently activated the detachment at Phu Cat AB, provided a comprehensive commentary on the logistics problems encountered. He also offered recommendations for future LBR detachment activation:¹³

I recommend that for units being activated, supply documents, including activating orders, ISSL's, vehicle requirements, bench stock, and tool box listings, E aid requirements and expected consumption data on all items including munitions should be submitted as soon as two conditions are met; The host base has the capability to process these documents, and There are sufficient detachment facilities and personnel to effect close supply coordination and to safeguard the property. If these conditions are not met at least 10 weeks prior to the operational date, a TA 171 kit and a mission support kit with suitable spares should be used. Personnel reporting to the new unit should hand carry all required individual equipment, including tool boxes and life support equipment.

Shortages of equipment presented major problems during the first part of my tour. During the activation of Det 11, 601B's submitted through supply liaison at Nha Trang were not filled. The majority of E aid equipment, special tools, life support equipment and spares were not available on the 4 Nov 66 operational date. Some difficulty was experienced in documenting MAJCOM authority for TA 462 equipment. Local interpretation of directives and lack of adequate facilities also prevented issue of TA 016 equipment. It was only through personal contact that minimum amounts of life support equipment and weapons were borrowed from other bases. Crewmembers exchanged helmets and survival gear with one another. Locator beacons and survival radios were not available on the first two

combat saves. Det 11 had 22 saves using the hoist before a forest penetrator was issued by BEMO. Most of these difficulties were avoided when Det 13 was activated. I submitted my requirements directly to the base supply officer at Phu Cat. Grey eagle supplies and equipment were sufficient during the coordination phase, and Bitterwine provided TA 006 and some TA 016 equipment as detachment facilities were built. Coordination with the life support section at Hq 7th AF permitted all required survival equipment to be shipped directly from the prime depot under unit activation rules.

In general, individual equipment such as tool boxes and life support equipment were not available until the base supply system went from manual to PCAM.

Aircraft spares, bench stock, pyrotechnics, and some special tools were obtained through properly documented lateral support, until the host base was able to support normal requirements. It required about 8 weeks to reach a 50% fill rate, and 10-16 weeks to reach 96%.

When possible, aircraft transferred to a newly activated base should have all 780 gear and special aircraft equipment. I have mentioned forest penetrators, pyrotechnics, and survival kits. To the list of items which were borrowed to become operational at Tuy Hoa add a fire suppression kit. Blade supports were locally fabricated of 2x4 wood and metal shelving since the aircraft were exposed for days at a time to winds from 40-60 MPH.

Logistic support generally improved as time elapsed during 1965-68.

Some major factors that contributed to this improvement were:

- (1) Establishment of better and more reliable lines of communication.
- (2) Establishment of in-country and base stock levels.

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- (3) Establishment of more accurate usage factors for the operational environment.
- (4) Establishment of more effective supply accounting procedures.
- (5) Establishment of more and better supply housing facilities.

At end 1964 there were 13 HH-43's in SEA, and their OR rate for the quarter was 84%. During the period January 1965 through March 1968, the number of HH-43's increased 147% and their sortie rate increased 331%, while their average OR rate was maintained at 85.4%. (Ref Tab D, p. 39, Tab G, p. 160, Tab H, p. 188.)

c. WEATHER: Weather support for helicopters performing the LBR task from the more active bases presented no major problems. Normally, these bases had weather facilities to support tactical air operations, which in turn adequately served the LBR force. Mission reports do indicate some problems encountered by elements operating from deployed locations and operations in support of some ACR and battlefield medical evacuation tasks. These problems resulted from the non-availability of local weather data in remote areas and did not reflect on the service rendered by established weather facilities. The weather facilities just had no reliable means from which to gather current data in these locations. The lack of serious complaints in the area of weather support indicated that it was generally adequate.

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d. INTELLIGENCE:

Although varying degrees of accessibility and quality of intelligence briefings and data were available to LBR aircrews none were adequate to provide a level of intelligence needed to assist them in attaining maximum mission effectiveness. The problem, simply stated, was that no agency had the mission of preparing and disseminating intelligence information tailored specifically to the LBR mission. Some elements of intelligence tailored for the tactical fighter/bomber aircrews were useful -- the same applied to Army unit intelligence, but these bits and pieces were only partially useful, were incomplete and were not available on a timely basis to the LBR aircrews. Some typical reactions as to the adequacy of intelligence information were provided by pilots assigned to the following bases:

Nha Trang: ¹⁴

We were also able to receive very frequent intelligence briefings from the Sector Advisors (U. S. Army) which proved to be far more reliable than the Air Force intelligence information.

Tuy Hoa: ¹⁵

. . . many SAR missions were denied us by the JSARC because of their concept of "Hot Areas". . . generally based on incomplete intelligence information.

Da Nang: ¹⁶

Intelligence was seriously lacking as the wing

intel' shop concentrated only on those items necessary for F-4 operations.

The LBR intelligence requirement was highly specialized in that the information needed was a highly detailed coverage primarily of the ground force situation within a 75 NM radius of their base. Currency and instant availability of data were necessary to afford maximum exploitation of the usefulness of this information. From a practical viewpoint, these elements could be provided only by an intelligence function integral to the LBR unit. No other agency developed the necessary information in usable form or could be responsive to the 24 hour alert requirement of the LBR function.

e. COMMUNICATIONS:

Communications remained a major problem throughout the period. The key to the rapid reaction of LBR elements and effective mission prosecution was more dependent upon rapid, reliable communications than any other single factor. It must be assumed that the effectiveness of SAR forces would have improved proportionately with the improvement of communications capabilities.

A comprehensive picture of the limited communications facilities available was drawn by the comments of personnel involved in LBR operations

during the 1965-68 time frame. The following quotes from these personnel are listed by year(s) and location:

1965, Tan Son Nhut: ¹⁷

Land lines and radio sets were in critical supply, resulting in overloading and long delays in traffic. Only one answer to this. MORE.

1965, Takhli: ¹⁸

I would have to say our biggest problems were getting equipment to operate with, and communications. Sometimes it would take all day to get through to Saigon and then you were lucky if both parties could hear. Aircraft parts were never any real problem if you could get through to Saigon with your requests.

1966, Phan Rang and Pleiku: ¹⁹

Communications were a major problem. A newborn unit requires much higher headquarters guidance and due to the limited communications it was rare that we were successful in contacting 3rd ARRGp by telephone.

1966-67, Tan Son Nhut: ²⁰

. . . . Telephone communications with our Detachments was almost impossible during the daytime because of inadequate facilities and the large number of high priority calls. On several occasions I recall priority TWX's would take a week or longer and sometimes would not be accepted for transmission because of the backlog of higher priority messages. Mail was found to be the most reliable and in many cases the most rapid means of communication.

1966-67, Nha Trang; ²¹

The most serious problem we had throughout the tour was the lack of adequate communications, both aircraft and ground.

At best, the telephone communications were unsatisfactory. Frequently, an immediate call required as much as a half hour to Tan Son Nhut. To get an Army aviation unit located 13 miles south of us (where we usually obtained gunship assistance) required us to go through three switch boards and could take hours. We definitely needed a hot line to the JSARC at Tan Son Nhut and also needed one to the DASC located in Nha Trang. I was Mission Commander on four search missions during this tour and the lack of adequate communications greatly hampered the operation on each one. In addition to the lack of telephone communications, I needed both UHF and FM ground radios in the detachment during these search missions. We scrounged aircraft type FM and UHF radios, but could not get them maintained by the Air Force because they were not authorized. In a formal request to the 38th for assistance, about all they said was the radios were not authorized. Eventually we did manage to keep the FM working through assistance from an Army Avionics unit, but could not keep the UHF operational. JSARC also did not have adequate communications and had to rely on the telephone for the majority of their in-country communications. There were a number of agencies which should have had hot lines directly to the Center. All the DASCs had hot lines to 7th AF, but did not have a line to JSARC and in many cases when an aircraft was shot down, the DASCs were the first agencies to receive this information, usually relayed from their FACs. In addition to the DASCs, JSARC also needed direct lines to all Flight Following Agencies (including the ones controlled and operated by the Army), the Navy Coastal Patrol Centers, all GCI sites, each base command post and of course, the detachments.

1966-67, Tuy Hoa and Phu Cat; ²²

Borrowed FM equipment also permitted contact between our alert helicopter and the operations facility at Phu Cat.

1966-67, Tuy Hoa; ²³

Communications were almost non-existent.

1967-68, Pleiku; ²⁴

The only true major problem was communications. Since the Rescue effort was controlled by the JSARC at Tan Son Nhut, it was necessary to communicate rapidly. This was not possible in many instances due to telephone circuits being non-operational and no availability of radio communications.

1967-68, Tan Son Nhut; ²⁵

. . . . In-country communications with the ten LBR/ACR detachments proved to be frustrating until direct hot lines were installed between the JSARC and each detachment. These communication lines were all installed by the end of my tour (Apr 68) with the exception of a hot line to Det 10, Binh Thuy. Prior to the direct line installations it was not unusual to incur a 10-30 minute delay before establishing communication on an immediate precedence phone call between the JSARC and units in the field. Through written action by the 3rd ARRGp communications agencies agreed to give precedence to rescue immediate calls over immediate precedence calls of another nature. It appeared that the precedence system was abused by users in Vietnam. Most calls were placed on an immediate precedence since there was little chance to get through on a lesser precedence.

A serious communication problem existed during the prosecution of in-country SAR missions. Numerous times ARRS helicopters were launched on a reported in-country emergency only to find out later that other forces (usually Army helos) were on scene and had effected recovery. Most of these in-country emergencies were reported by a GCI site to the JSARC who normally would make the decision whether to launch ARRS LBR/ACR HH-43 acft. The JSARC would inquire of the GCI if any forces were on scene or airborne nearby which could be diverted to the scene. Numerous times Army helos were in the SAR area taking rescue action but without the knowledge of GCI, traffic controlling agencies, or the JSARC. In these cases the JSARC had no choice but to launch ARRS forces. Many times after ARRS forces were enroute to a SAR scene it was learned that they were not needed. At this point the JSARC would normally direct ARRS forces to return to home station.

The lack of adequate communications facilities indicated by the above statements tended to degrade the overall LBR capability to respond to and effectively prosecute the missions. If adequate communications had been available, many problems that plagued the LBR detachments would have been eliminated; and the total SAR effort would have been improved.

f. AIR REFUELING: Not applicable.

g. RESEARCH AND DEVELOPMENT: All facets of Research and Development were covered in ARRS Corona Harvest Volume I, USAF SAR in SEA, Section V.

h. OTHER: None.

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2. ADDITIONAL CONSIDERATIONS: None.

3. SUMMARIZE LESSONS LEARNED:

a. Assistance and cooperation from local base commanders and other agencies were directly related to the degree of initiative and ^{pride} PRIDE demonstrated by LBR personnel.

In every instance of the initial activation of an LBR unit, facilities were meager. Where personnel remained passive and showed little or no effort to improve the situation, the host base remained passive to the LBR's needs and desires. However, in those instances where the LBR units made a concerted effort to improve working and living conditions, the host base responded with equal concern. As one detachment commander ably summed up the situation, "The more Rescue proved itself with self-help, the more assistance was forthcoming from the Base Commander." 26

b. Mission support kits deployed to support the HH-43's were inadequate.

Consumption data for HH-43's, operating in a hostile environment, was not available prior to the conflict in Vietnam. The aircraft had not been envisioned as a wartime vehicle; thus, it followed that wartime consumption rates had not been seriously

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considered. As previously stated, the MSK's were developed to enable sustained operations while deployed for peacetime SAR activities. Operations during peacetime afforded ample time for the replacement of used parts into the MSK's from home base stocks, but the initial time delays required to receive parts from outside SEA were unacceptable. These time delays were subsequently reduced as supply pipelines and in-country base stock levels were filled.

c. The time lag between the arrival of aircraft spare parts and the establishment of positive supply accounting procedures in-theater was excessive.

Aircraft parts hidden among a myriad of items within a supply area, but not recorded on stock records, were of the same value to maintenance personnel as back order voucher numbers. The rapid buildup of supply levels in remote areas invited the oversight of many items, but it was hard to comprehend how High Value items such as helicopter engines and transmissions could have gone unnoticed. One 3rd ARRGp Chief of Maintenance noted such a discrepancy at Udorn as late as 1966-67. He located three HH-43 transmissions and two engines, although

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the stock records indicated zero balances.²⁷

d. Specialized current intelligence information, vital to maximization of LBR mission success, was not available on a timely, complete and accurate basis.

e. Communications capabilities did not improve commensurate with the demands.

As the intensity of the war increased, the requirement for more and better communications equipment increased.

Communications as discussed in the Support section indicated that the communications picture did not change appreciably during 1965-68. Reliability and rapid contact capability improved very little. A major problem that remained was the inability to readily contact elements of the other U. S. forces.

4. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a through e, generally support, in the same alphabetical order, the lessons learned that have been listed above:

a. The importance of a cooperative atmosphere between the LBR unit and the host base must be foremost in the minds of all LBR personnel.

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This is an education process that demands Command attention. When possible, LBR commanders should be carefully selected from available personnel, and not assigned on the basis of rank alone. A small unit, such as an LBR, might easily be overlooked by base officials when facilities are assigned and when priorities in other matters are established. The abilities of the LBR commander to make his requirements known and to sell his position in a convincing, yet personable, manner are major assets. The demonstrated initiative and self-help improvement efforts of the LBR commander and his personnel greatly influence his success or failure in these endeavors.

- b. World-wide mobility kits should be developed for Rescue helicopters to support wartime and peacetime operations.

Consumption data compiled in SEA should be used as a basis for wartime and jungle consumption estimates, with those parts requiring change from enemy actions not altering the jungle operations figures or vice versa. The peacetime consumption rates for future helicopters should be established by operations in varied (jungle, arctic, desert, etc.) environments or climatic controlled hangars to ensure that realistic figures are derived.

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Wartime consumption figures for future helicopters would have to be projected from those obtained in SEA and adjusted with respect to installed armor and assigned tasks.

From the above data, develop basic mobility kits whose contents can be easily altered. Upon notification of deployment, items peculiar to the operational environment could be added as necessary.

The best peacetime method to test the adequacy of established helicopter mobility kits would be the ARRS deployment and participation in tactical exercises and war games. A contingent of ARRS forces should deploy with the tactical force and operate in the same environment.

- c. Supply personnel should arrive at operating bases shortly after combat forces, but not later than the buildup of base stock levels.

Qualified Base Supply personnel should arrive at operating locations in ample time to prepare for the acceptance of incoming equipment. Trained personnel should be in the first contingent and care taken to ensure that proper preparations are made to receive supply accounts and to

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properly document items received. Positive control of High Value items must be established immediately.

d. That a fully capable intelligence function be incorporated into each combat LBR unit and controlling agency to provide the specialized rescue/recovery intelligence support needed.

LBR operations require, in addition to Air Force tactical intelligence data, timely and complete Viet Cong contact and fire fight information such as must be available from low echelon Army units operating in the area of concern. Because of the unscheduled nature of LBR missions, timely, accurate and complete information must be available to the aircrews at all times in some readily comprehensible form such as a constantly updated visual display of the area. Sufficient intelligence resource should be provided to ensure availability of this level of service.

e. Research and Development personnel should direct their efforts toward standardizing communications equipment utilized by the joint services.

The development of such equipment with the capability to assign designated service elements, or functional areas, a common

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frequency would greatly improve the communications posture.

A future conflict involving only one service is remote, but joint-use equipment would be adequate for such an eventuality.

However, equipment uncommon to all services would not be adequate for joint operations.

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SUPPORT ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. Ltr, Col Edward Krafka to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, 24 Oct 1968, p. 3.
2. Ltr, Major Ronald L. Haglund to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, undated, p. 1.
3. Ltr, Major David E. Allen to Hq MAC (ARXLR), Subj: Corona Harvest Study, 15 Oct 68, pp. 1-2.
4. Ltr, Major Ralph H. Bush to ARRS (ARXDC), Subj: Corona Harvest Study, 29 Oct 68, p. 3.
5. Ltr, Major Cowles/3621 to ARRS (L/Col Price), Subj: LBR Problems In SEA, 14 Nov 1968, p. 2.
6. Ltr, CRCOP-S (Maj Vermeys/3233) to ARXDC (Lt/Col Crozier), Subj: Corona Harvest Study, 1 November 1968, p. 1.
7. Ltr, ERSTN (Capt Heeter/5352) to Hq ARRS (ARXDC), Subj: Corona Harvest Study, 23 October 1968, p. 1.
8. Ltr, TUSLOG Det 84 to Hq ARRS (ARXDC), Subj: Corona Harvest Study, 28 Oct 68, p. 1.
9. Ltr, Lt Col Archie R. Taylor to Hq ARRS (ARXDC/Lt Col Crozier/5871), Subj: Corona Harvest Study, 15 Oct 1968, p. 1.
10. Ltr, 3d ARRGp Commanders Monthly Ltr, 4 Jan 1966, p. 4.
11. Krafka, 24 Oct 1968, op. cit., p. 3.
12. Ltr, Hq ARRS (ARXDC/Lt Col Crozier/5871) to Lt Col Wm. Opler, 48th ARRSq, Eglin AFB, FL, Subj: Corona Harvest Study, 15 Oct 68, p. 3.

(SUPPORT ANALYSIS Footnotes - continued)

13. Ltr, Capt. Edmund W. Fischbeck, Jr. to Lt Col Crozier (ARXDC/Lt Col Crozier/5871), Subj: Corona Harvest Study, undated, pp. 2-3.
14. Bush, 29 Oct 68, op. cit., p. 3.
15. Ltr, Det 13, Western ARRC/Major Elliff/232 to ARXDC, Subj: Corona Harvest Study, 10 October 1968, p. 2.
16. Ltr, Capt. Standley A. McGhan, undated.
17. Ltr, Det 4 AARRC (Major Clifford E. Brandon) to Hq ARRS (ARXLR), Subj: Corona Harvest Study, 8 Nov 1968, p. 1.
18. Haglund, undated, op. cit., p. 1.
19. CRCOP-S (Maj Vermeys/3233), 1 Nov 1968, op. cit., p. 1.
20. Ltr, Det 8 AARRC (Capt Gordon L. Hall) to Hq ARRS (ARXDC), Subj: Resume of SEA Tour, 21 Oct 1968, p. 2.
21. Bush, 29 Oct 68, op. cit., pp. 3-5.
22. Fischbeck, undated, op. cit., p. 4.
23. Det 13, Western ARRC (Major Elliff), 10 October 1968, op. cit., p. 1.
24. Ltr, Capt. Donald D. Metzinger to Hq ARRS (ARXDC/Lt Col Crozier), Subj: Corona Harvest Study, 6 Dec 1968, p. 2.
25. Ltr, Hq ARRS (AROCF/Maj Crouch) to Hq ARRS (ARXLR/Lt Col Crozier), Subj: Corona Harvest, undated, pp. 6-7.
26. Taylor, 15 Oct 1968, op. cit., p. 1.
27. Ltr, Hq ARRS to Lt Col Wm Opfer, 15 Oct 68, op. cit., p. 3.

PLANS, CONCEPTS AND DOCTRINE ANALYSIS

1965 - 31 March 1968

1. WERE PLANS AVAILABLE? The only plans identified during this time period which pertained directly to the LBR units and functions were those which were used to move the unit components into place. These took two basic forms, operations orders and programming plans. These, in some cases, were supplemented and/or implemented by operations plans.

2. WHO WROTE THEM? The operations orders and programming plans were written by Hq ARRS. The supporting operations plans were written by 3d ARRGp. Program Action Directives (PAD), written by PACAF, ensured provision of base support at receiving locations.

3. WHEN WERE THEY WRITTEN?

The operations orders were dated from 7 April 1965 to 14 October 1965. These were used in the establishment of the six units created in 1965 at Ubon, Udorn, Tan Son Nhut, Cam Ranh Bay, Pleiku and Binh Thuy.¹

Programming Plan 571, published in November 1965, included the establishment of the LBR unit at Tuy Hoa and the move of one from Nakhon Phanom to Phan Rang. This plan was superseded by 571A in September 1966

which included the addition of the LBR units at Nha Trang and Phu Cat.

Third ARRGp operations plans have been identified which were written in support of actions directed in those programming plans.²

4. WERE THEY ADEQUATE?

The operations orders were not adequate in that, although they did provide the necessary information either directly or by reference, they did not provide any sort of a control or measurement system or device for management to determine progress of actions. Also, the provision of data by reference was quite frustrating, at least, and could inhibit successful accomplishment of the task. For example, the Logistics section of the operations order refers to Annex F of ARS Programming Plan 510 (with exceptions); several sections of ARS Manual 28-2, Mobility Manual and ARS Operations Order 404-64. Administration and Funding refers to 510 and 28-2, Command and Communications to 510 and 404-64, Concept of Operations to 404-64 and Second Air Division Operations Order 402-65. It is immediately apparent that the necessary tasks could not be performed with only the basic operations order in hand.

The programming plans were far more comprehensive than the operations orders, providing a detailed time phased schedule of actions necessary to accomplish the task and detailed guidance to all staff agencies.

concerned. In absence of evidence to the contrary, it must be assumed that they were adequate to accomplish the task. Difficulties discussed in detail in Personnel, Hardware and Support sections of this volume are more attributable to incomplete staff action, lack of or incomplete coordination or other factors rather than to inadequacy of the plans per se.

5. WERE THEY USED? They were all used as changed in some instances to remain abreast of changing factors impacting on them.

6. WERE THEY VALID (WHETHER USED OR NOT?)

Although they needed supplementing, by reference, for much of the specific information needed to accomplish the task of moving the resources to establish an LBR unit, each of the operations orders was valid in that it served to carry out a specific JCS and Chief of Staff, Air Force, (CSAF) directed action. They identified existing resources to be moved to specified established bases.

The programming plans also resulted from specific authoritative direction and provided the detailed guidance necessary to ensure compliance with this direction. Again, they identified existing resources to be moved to certain existing established bases.

7. WERE THEY IN AGREEMENT WITH:

a. EVENTS?

It was necessary to issue changes to the operations orders and programming plans to ensure agreement with changing events. In fact, Programming Plan 571 at one time was so far overtaken by events (some pertaining to the HH-3 sections of the plan) that it was completely rewritten as Programming Plan 571A.

A breakdown in the planning cycle or communications of intention was apparent in some instances, which contributed to a lack of compatibility of our unit requirements and the receiving base capability to satisfy these requirements. Illustrative of this problem were the comments of an HH-43B pilot who arrived at Udorn on 8 May 1965:³

. . . . The base had had no previous indication of our assignment there until we arrived. Far behind on their planning and construction, the base was critically unprepared to accept the rapid influx of personnel and equipment which was arriving daily. . . .

In this context, there was some disagreement between plans and events. The Personnel and Support sections of this volume discuss at length many examples of specific problems which were at least aggravated by non-use or ill-use of plans or lack of communication or coordination concerning planned actions and requirements. These breakdowns seemed to occur primarily in agencies outside ARRS which, of course, were somewhat

less interested in ARRS problems than was ARRS. Therefore, the closest of coordination, including persistent follow-up action, was necessary to attain fulfillment of our needs. When this element was lacking, plans tended not to agree with events that followed. It is not intended to imply that coordination and follow up will provide all needs but rather that lack of this type action is almost certain to ensure a lack of fulfillment of needs, no matter how well and how completely a plan is written.

Another area in which there was evidence of disagreement between plans and events involved the choice of base to place an LBR unit as it pertained to mission requirement potential at that base. This subject was discussed by the Commander of the detachment at Nha Trang.⁴

The next problem was that we did not have a mission. The only fighter aircraft at Nha Trang were VNAF A-1s so most of the LBR work consisted of scrambling on C-130s with an engine feathered. About a week after we received our HH-43B, we happened to overhear a Mayday call and got involved in a search for an Army O-1 that had crashed. Although there were a number of other aircraft in the search area, we could not get radio contact with any of them over UHF, including guard and were not able to get any information. We did not locate the aircraft or crew, but the crew walked out and were found the following day. Since they were based at Nha Trang, we had the opportunity to talk to them and discovered that we had been receiving ground fire the entire time we had been searching. (Air Force intelligence had told us that it was a secure area.) Through this crew, we came into contact with several Army aviation units, the MAC-V Sector and Sub-Sector Advisors, and this was the beginning of establishing a mission for us. Prior to

this, no one even knew that we were located at Nha Trang or what our job was, and had no idea who to contact for rescue assistance. We published a long letter and distributed it to units throughout II Corps area. After this, we started receiving many requests for rescue briefings from both Army and Air Force units. We were also able to receive very frequent intelligence briefings from the Sector Advisors, which proved to be far more reliable than the Air Force intelligence information. Within a few weeks after we published the letter, we were frequently receiving notification of a missing or crashed aircraft prior to JSARC at Tan Son Nhut.

This officer's observation highlights the need to evaluate carefully the need for the unit prior to base selection. Because the LBR mission requirement is dependent primarily on the type aircraft assigned and missions conducted from the base, a constant monitoring of this need must be maintained to sense quickly and react to any significant change in aircraft or mission assignment, actual or planned.

b. CONCEPTS AND DOCTRINE?

The plans were in agreement with concepts and doctrine as expressed later in Air Force Manual 2-36, "Operational Aerospace Doctrine Search, Rescue, and Recovery Operations."⁵

The U. S. Air Force has global search and rescue (SAR) responsibility for Air Force aerospace forces. Within the Air Force, the Military Airlift Command (MAC) Aerospace Rescue and Recovery Service (ARRS) is the primary search, rescue, and recovery force. . . . This manual presents operational doctrine and policies governing aerospace search, rescue, and recovery operations for personnel and

materiel during both peace and war. It also provides guidance for personnel and activities supporting, being supported by, or coordinating with the MAC ARRS.

Search, rescue, and recovery activities constitute an essential element in the total aerospace posture of the United States. The basic contributions of SAR/recovery forces are the preservation of human life, including highly trained combat aircrews. . . . Loss potential to the Air Force is substantially reduced by providing SAR/recovery forces organized, trained, and equipped to assist aerospace crews in distress and to search for, locate, and recover downed personnel. . . .

.....

To provide an immediate capability for aerial rescue at Air Force bases with a high accident exposure potential, small units of vertical lift aircraft are assigned. The units are equipped for rapid response to an aircraft incident on or near the base of assignment and provide both a fire suppression capability and an effective rescue capability within the limited scope for which intended. Although this limited-function force is not compatible with the operational essentials desirable for global rescue and recovery, the homogeneity of purpose and the applicability to other rescue/recovery roles dictate incorporation of these units into the area SAR system. The total LBR resource must be assigned to, and controlled by, the primary SAR force, to provide depth in experience and standardization of procedures and to prevent duplication of supervisory and support staffs. LBR forces provide the capability to:

Respond rapidly to incidents without regard to terrain.

Control and suppress aircraft fires and reduce fatal cockpit/cabin concentrations of heat and carbon monoxide.

Remove crash victims and suppress fires

concurrently.

Remove victims rapidly to sophisticated medical facilities.

.....

Operational control of LBR detachments is vested in the commander of the base of assignment. When the helicopter element is an integral part of an ARRS squadron, operational control is exercised through the ARRS squadron commander. Operational control is assumed by the Commander, ARRS, when the Air Force directs diversion in support of special activities.

Assignment of noncombat configured HH-43B s was technically in disagreement with AFR 55-7 which stated that peacetime SAR forces must be equipped for the wartime mission. This inconsistency was necessary as a matter of expediency due to a lack of adequate numbers of helicopters suitably configured for the combat mission as discussed in detail in the Hardware section of this volume.

c. EACH OTHER? As each of the plans directed the movement of specific resources to specific places, there was no apparent mutual conflict. The accuracy of this statement, however, is dependent upon retracing the time line of the events directed considering all changes. In the case of Programming Plan 571, a complete rewrite into 571A was necessary with concurrent rescission of 571. Given this same time sequence consideration, the supporting plans were also in agreement.

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d. INTER/INTRA SERVICE? There is no evidence indicating lack of inter or intra service agreement with the plans.

8. HOW DID ORGANIZATIONAL, COMMAND AND CONTROL ARRANGEMENTS INHIBIT OR ENHANCE THE ACCOMPLISHMENT OF THE TASK?

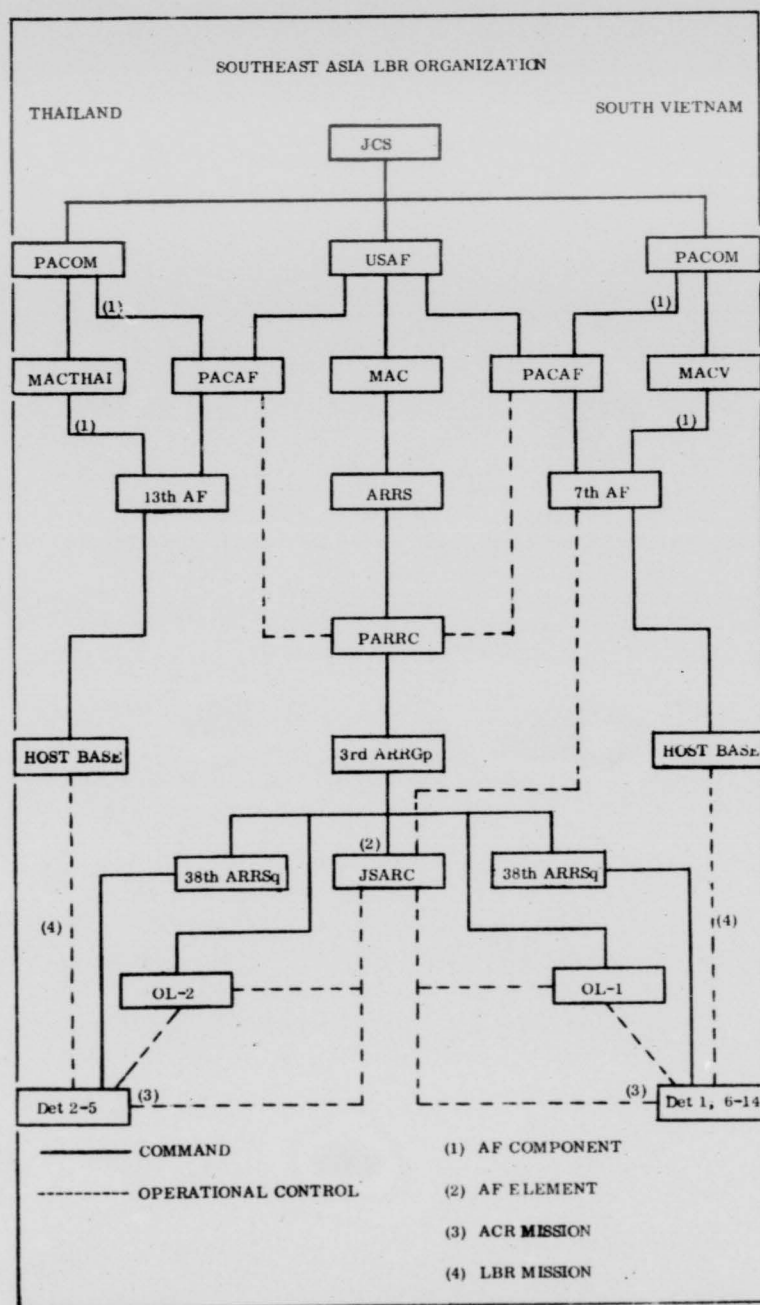
By the end of March 1968, there were a total of 14 LBR detachments in SEA, 10 in RVN and 4 in Thailand. LBR detachments, for the LBR mission, were under operational control of the host base commander. For ACR missions, they were operationally controlled by the JSARC acting for Commander, 7th AF either directly or through RCC Son Tra (OL-1) or RCC Udorn (OL-2). (Ref Tab K)

The SAR structure and responsibilities in SEA had been clearly laid out during this period and were clearly stated in Seventh Air Force Manual 64-1 dated 1 March 1968 as follows:⁶

The Commander-in-Chief, Pacific, has delegated Search and Rescue (SAR) responsibility for the Saigon, Bangkok and Rangoon Flight Information Regions (FIR) to the Commander, Seventh Air Force. This area includes the Republic of Vietnam (RVN), North Vietnam (DRV), Laos, Cambodia, Thailand, Burma, and water areas within the FIRs. The Commander, Seventh Air Force, has operational control of USAF rescue capable resources and has designated the Commander, 3rd Aerospace Rescue and Recovery Group, as executive agent for SAR activity in his assigned area of responsibility.

The Commander, Seventh Air Force, maintains a Joint Search and Rescue Center (JSARC) under his Directorate of Aerospace Rescue (DAR) at Tan Son Nhut

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AB, RVN through which he directs Search and Rescue forces throughout his area of responsibility. The Commander, 3rd Aerospace Rescue and Recovery Group, as the designated representative (DAR) of the Commander, Seventh Air Force, commands, controls, and operates the JSARC at Tan Son Nhut AB, and commands and controls all USAF Aerospace Rescue and Recovery Service Forces in Southeast Asia.

The JSARC is the controlling and coordinating agency for all SAR activity in the 7AF area of responsibility. Detachments of the 3 ARRGp known as Rescue Coordination Centers (RCC), are located at Son Tra AB (Monkey Mountain) RVN, Udorn RTAFB, and a contingency RCC is organized under the Commander 631st Combat Support Group at Don Muang RTAFB, Thailand to provide regional control of SAR missions. The JSARC and RCCs are manned with qualified rescue controllers on a full time basis to provide adequate rescue support to emergency and preplanned requirements.

This manual further stated that LBR units are located on SEA bases to provide crash fire suppression and rescue capability to support tactical aircraft operations at or near the base. It also states that the LBR helicopters, HH-43B/F, call sign "Pedro," are also used for combat rescue missions occurring within short distances of their operating locations and provide backup for the "Jolly Greens" within their radius of action.

9. ADDITIONAL CONSIDERATIONS: None.

10. SUMMARIZE LESSONS LEARNED:

a. Plans for wartime deployment of SAR forces were improving at all

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echelons but still had some inadequacies.

The tri-service directive on wartime SAR procedures was changed to include the statement that to operate in hostile areas peacetime SAR forces must be equipped and trained for the wartime mission. However, it did not state definitely that these actions must occur in peacetime in order to be prepared for the wartime mission. It also tasked only the area commander to develop specific procedures, tactics and equipment consistent with combat and natural factors involved. To ensure readiness, the primary SAR forces must also be tasked with this job on a continuing basis, peace and war.

The Air Force Manual on SAR Doctrine is totally lacking in this area of preparedness; in fact, it almost totally ignores the necessity for combat equipping and training SAR forces.

Plans written directly in support of specific deployments improved significantly during the period; but there still remained a breakdown in staff coordination among the agencies and commands concerned to the degree that, in at least one instance, when a unit arrived at its assigned base, the receiving base commander apparently was not even aware that the deploying unit was

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scheduled to be placed on his base.

- b. Clearly stated, detailed timely direction on SAR organization and procedures was needed to permit proper utilization and control of both primary and secondary SAR forces and their support, thus ensuring maximum results.

Evolution of an effective SAR organization during the 1965-68 period was followed, with significant lag, by a most useful and comprehensive directive, 7AFM 64-1, which was finally published 1 March 1968. The lesson to be learned related primarily to the time element. This document was sorely needed all through this period but became available only at the close of the period. Many of the misunderstandings and weaknesses of the SAR system during this period probably can be attributed to a lack of complete knowledge of the subject by the many individuals concerned directly and indirectly.

11. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a and b, generally support, in the same alphabetical order, the lessons learned as listed above:

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a. That the development, preparedness and planning for deployment of primary SAR forces be given appropriate priority and emphasis to ensure readiness of the SAR forces to support any and all contingency force elements.

Recognition at JCS and Air Force level of the basic truth that wartime commanders cannot have adequate wartime SAR forces unless such forces are prepared and maintained during peacetime should be clearly expressed in the appropriate tri-service and Air Force documents.

b. The development of appropriate SAR organization, procedures and support within a theater of operations should be given priority consistent with the development of other combat elements. This development should be followed at the earliest practicable date with a comprehensive directive providing guidance to all agencies and individuals concerned. Insofar as practicable, at least the basic elements of the SAR organization, procedures and support should be documented before the fact as a part of the contingency plans for any area and any size operation wherein it is envisioned that U. S. forces may be deployed/employed.

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PLANS, CONCEPTS AND DOCTRINE ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. Msg, ARS (AROOR) 50134 Apr 65, Subj: Deployment of a Local Base Rescue Detachment to Ubon AB, Thailand to Support the CINCA FSTRIKE F-4C Unit at this Location (ARS OPORD 410-65), 7 April 1965.

Msg, ARS (AROOR) 50164 Apr 65, Subj: Deployment of a Local Base Rescue Detachment to Udorn AB, Thailand to Support CINCA FSTRIKE Tactical Fighter Units (ARS OPORD 412-65), 28 April 1965.

Msg, ARS (AROOR) 50317 July 65, Subj: Air Rescue Service Operations Order 417-65 (ARS OPORD 417-65), 23 July 1965.

Msg, ARS (AROOR) 50342 Aug 65, Subj: Change One to ARS OPORD 417-65, 9 August 1965.

Msg, ARS (AROOR) 50422 Sep 65, Subj: Air Rescue Service Operations Order 418-65 (ARS OPORD 418-65), 27 September 1965.

Msg, ARS (AROOR) 50469 Oct 65, Subj: Air Rescue Service Operations Order 420-65 (ARS OPORD 420-65), 14 October 1965.
2. 3d ARRGp Operations Plan 2-66, August 1966.
3. Ltr, Major David E. Allen to Hq MAC (ARXLR), Subj: Corona Harvest Study, 15 October 1968, p. 1.
4. Ltr, Major Ralph H. Bush to ARRS (ARXDC), Subj: Corona Harvest Study, 29 Oct 68, p. 4.
5. Air Force Manual 2-36.
6. 7AF Manual 64-1.

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GLOSSARY

ACR - Aircrew Recovery
AD - Air Division
ADC - Air Defense Command
ADF - Automatic Direction Finder
AF - Air Force
AFLC - Air Force Logistics Command
AFM - Air Force Manual
AFR - Air Force Regulation
AFSC - Air Force Specialty Code
AGE - Aerospace Ground Equipment
ALMAJCOM - All Major Command
AOB - Air Order of Battle
AOC - Air Operations Center
APCS - Air Photographic and Charting Service
ARRGp - Aerospace Rescue and Recovery Group
ARRS - Aerospace Rescue and Recovery Service
ARS - Air Rescue Service
ARTF - Aerial Reconnaissance Task Force
ARVN - Army, Republic of Vietnam
ASW - Anti-submarine Warfare

(Glossary - continued)

ATC - Air Training Command

AU - Air University

AWS - Air Weather Service

BEMO - Base Equipment Management Office

CARC - Central Air Rescue Center

CBPO - Consolidated Base Personnel Office

CHECO - Contemporary Historical Evaluation of Combat Operations

CINCPAC - Commander in Chief, Pacific

CINCPACAF - Commander in Chief, Pacific Air Forces

CIRVIS - Communications Instructions for Reporting Vital Intelligence Sightings

COMUSMACV - Commander, United States Military Advisory Command, Vietnam

CONUS - Continental United States

CSAF - Chief of Staff, Air Force

CQ - Charge of Quarters

DASC - Direct Air Support Center

Det - Detachment

DFC - Distinguished Flying Cross

DR - Dead Reckoning

EARC - Eastern Air Rescue Center

(Glossary - continued)

EEI - Essential Elements of Information

EUCOM - European Command

EUR - Emergency Unsatisfactory Report

FAC - Forward Air Controller

FCF - Functional Check Flight

FIR - Flight Information Region

FM - Frequency Modulation

FOL - Forward Operating Location

FSK - Fire Suppression Kit

FY - Fiscal Year

GCA - Ground Controlled Approach

GCI - Ground Controlled Intercept

IFF - Identification, Friend or Foe

IFR - Instrument Flight Rule

ISSL - Initial Supply Support Listing

JAAF - Joint Action Armed Forces

JCS - Joint Chiefs of Staff

JOLLY GREEN - Call sign for HH-3 and HH-53

JSARC - Joint Search and Rescue Center

LBR - Local Base Rescue

LBRCF - Local Base Rescue Contingency Force

(Glossary - continued)

LOC - Lines of Communication

MAC - Military Airlift Command

MACV - Military Assistance Command, Vietnam

MACTHAI - Military Assistance Command, Thailand

MAJCOM - Major Command

MAP - Military Aid Program

MATS - Military Air Transport Service

MSK - Mission Support Kit

NASA - National Aeronautics Space Administration

NKP - Nakhon Phanom

NM - Nautical Mile

NORM - Not Operationally Ready - Maintenance

NORS - Not Operationally Ready - Supply

NORS-G - Not Operationally Ready - Supply, Grounded

NVN - North Vietnam

OHR - Operational Hazard Report

OJT - On-the-Job Training

OPLAN - Operations Plan

OPORD - Operations Order

OR - Operationally Ready

(Glossary - continued)

OSC - On-scene Commander

OSD - Office of Secretary of Defense

PACAF - Pacific Air Force

PACOM - Pacific Command

PAD - Program Action Directive

PAE - Port of Aerial Embarkation

PARC - Pacific Air Rescue Center

PARRC - Pacific Aerospace Rescue and Recovery Center

PCAM - Punch Card Accounting Machine

PCS - Permanent Change of Station

PDS - Personnel Data System

PEDRO - Call sign of HH-43

POL - Petroleum Oil Lubricant

QOR - Qualitative Operational Requirement

RCC - Rescue Control Center

RESCAP - Rescue Combat Air Patrol

RESCORT - Rescue Escort

RLAF - Royal Laotian Air Force

RTAF - Royal Thai Air Force

RVN - Republic of Vietnam

(Glossary - continued)

SAC - Strategic Air Command
SAM - Surface-to-Air Missile
SAR - Search and Rescue
SARTF - Search and Recovery Task Force
SEA - Southeast Asia
SEAOR - Southeast Asia Operational Requirement
SEI - Special Experience Identifier
SOR - Specific Operational Requirement
SPP - System Package Plan
SSB - Single Sideband
STAR - Speed Through Air Resupply
STOL - Short Takeoff and Landing
SVN - South Vietnam
TACAN - Tactical Air Navigation
TAS - True Air Speed
TDY - Temporary Duty
T.O. Technical Order
UE - Unit Equipment
UHF - Ultra High Frequency
UMD - Unit Manning Document

(Glossary - continued)

USAFMPC - United States Air Force Military Personnel Center

USE - Unit Support Equipment

VC - Viet Cong

VFR - Visual Flight Rule

VNAF - Vietnamese Air Force

VTOL - Vertical Takeoff and Landing

WARC - Western Air Rescue Center

WG - Wartime Guidance

WPS - Wartime Plans Short Range

WR - Wartime Requirements

WRAMA - Warner Robins Air Materiel Area

ZI - Zone of Interior

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1965 - 31 MARCH 1968

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30 JUL 1969

MAXLR(X) (Col Hallas/2207)

ARRS CORONA HARVEST Study Volume IV Change

AU (ASD-1)

1. Attached are ten copies of an errata sheet to replace page 70 of ARRS CORONA HARVEST Volume IV, entitled Aircrew Recovery (ACR) in Southeast Asia, dated 20 May 1969.
2. The present page 70 indicated that "the KC-135 and KC-97 could have also provided a refueling capability for the HH-3 and HH-53." This, of course, would not be factual with respect to the KC-135. Although this point was clarified on page 71 of Volume IV, it was felt that an errata sheet should be made.
3. When the attachment is withdrawn or not attached, this letter becomes unclassified.

FOR THE COMMANDER

JOHN O. SANDBACH, Colonel, USAF
Assistant DCS/Plans

1 Atch
Page 70, (C), 10 cys,
ARRS Aircrew Recovery
in SEA, Vol IV

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Volume IV

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SOUTHEAST ASIA

1965 - 31 March 1968

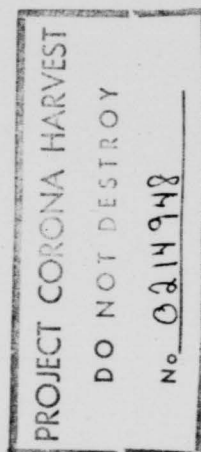
HQ ARRS

DCS/PLANS

20 May 1969

Prepared by

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INTRODUCTION

The Aerospace Rescue and Recovery Service (ARRS) input to the Air Force Corona Harvest Project, covering the 1954 - 31 March 1968 time period, has been addressed in four separate volumes as follows:

Volume I - USAF Search and Rescue in Southeast Asia

Volume II - Joint Search and Rescue Center (JSARC) in Southeast Asia

Volume III - Local Base Rescue (LBR) in Southeast Asia

Volume IV - Aircrew Recovery in Southeast Asia

Volume I presented a sequential overview of the total ARRS involvement in Southeast Asia (SEA) during the 1954-1968 period, and as such, did not adhere to the format outlined in Corona Harvest Operating Instruction dated 1 November 1968. In addition, it provided sequential continuity to planning, rationale and decisions which strict adherence to the approved Corona Harvest format would not permit. The functional areas of Training, Research and Development, Safety, etc., which were somewhat common to all missions, were addressed in Volume I to preclude total redundancy in the other three volumes.

Volumes II, III, and IV do adhere to the approved Corona Harvest format and address in detail the missions of SAR Command and Control,

Local Base Rescue (LBR) and Aircrew Recovery (ACR) which were not covered in depth in Volume I. This volume, as it pertains to the mission of Aircrew Recovery, concepts of operation, tactics and techniques, equipment deficiencies, etc., is, for the most part, independent of the other volumes. In some instances, page reference has been made to the other volumes to provide the reader ready access to detailed information on a particular subject, if deemed necessary.

Due to the lack of definition and capabilities of the Air Rescue Service (ARS) in the combat ACR role, during the 1954-1964 era, this time frame will not be addressed in accordance with the approved format. Information pertaining to this era will be provided as background data, in order to provide the reader with some knowledge of ACR capability prior to the introduction of ARS forces into Southeast Asia.

It should be noted that ARS did have an ACR mission in SEA prior to 1965; however, it almost solely involved the HH-43 helicopters and, for this reason, the ACR mission for the June-December 1964 period was addressed in the ARRS Volume III entitled "Local Base Rescue (LBR) in Southeast Asia."

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RESCUE - POST-KOREA

At the conclusion of any war comes a time when critiques are held and re-evaluations are made. After the Korean Conflict had ended, those in command of the United States Air Force examined in great detail USAF achievements and shortcomings.¹

The Rescue Service achievements in the Korean Conflict were self-evident in that "the 3d ARRSq became one of the most honored and decorated units in the Korean War," and ". . . was credited with a total of 9,680 rescues within the combat area. Of this number, 996 were UN personnel saved from behind enemy lines."² The helicopter played a vital role in the Korean rescue missions. Of the total 9,680 saves . . . "9,216 were carried out by helicopter" . . . of the 996 rescued from behind enemy lines . . . "846 of them were picked up by the dependable 'Whirly Bird'." ³

These save statistics dramatically emphasized the value of helicopters in combat rescue operations. The Air Force plan for reorganization, post-Korea, based on these evaluations, . . . "ascertained that a Rescue Service composed of 12 groups with 40 squadrons would be needed". . . ⁴ to support the proposed 137 Air Force wings globally. It was also recognized and reaffirmed that the ". . . purpose of the Air Rescue Service remain unchanged. Its function to support the air arm of the United States continued even when hostilities ceased. It was a combat-ready tactical organization

whose fundamental reason for existence was the recovery of the downed combat crewman."⁵

With a goal and mission identified, Air Rescue Service (ARS) strength by end 1954 increased to 12 groups with 38 squadrons to support global aerospace operations. This post war structure introduced specialized aircrew recovery into the Rescue mission.⁶

The 8th Air Rescue Group was designed and organized to provide a specialized aircrew recovery capability for Strategic Air Command for the return of downed aircrews from enemy areas. This was a highly specialized and technical operation, which encompassed techniques and procedures peculiar to deep penetration and recovery from enemy areas.

With the Air Rescue Service in this specialized type of recovery operation, it developed that the European and Pacific Air Commanders had similar requirements for combat recovery specialists in their areas. . . .

Thus, calendar year 1955 closed on a note of area specialization to meet specific and peculiar needs within an air command area, and a second peculiar requirement was superimposed on the overall pattern. This later - the wartime recovery of downed SAC crewmen from behind enemy lines - became generally identified as "aircrew recovery."

The weaknesses/inadequacies of the specialized area aircrew recovery concept were readily apparent during training exercises conducted in 1956 which proved "The compartmentalized and specialized SAC structure was too rigid and limited to fit in with the global characteristics of jet and long-range

support aircraft."⁷

By 1959, ARS developed and adopted a global concept of operations whereby procedures and operations were standardized, which resulted in the re-evaluation and eventual deletion of the specialized 8th Air Rescue Group and its two Strategic Air Command (SAC) recovery squadrons. At this time, the mistaken philosophy was applied to combat aircrew recovery which surmised that wartime SAR was merely an extension of peacetime SAR.⁸

This revised concept and wartime SAR philosophy had an immediate effect on the ARS force structure. By 1961, the Air Rescue Service was decreased to 11 squadrons (no groups) to satisfy the global SAR requirements. During this period, even the combat aircrew recovery mission was eliminated from the ARS mission directive.⁹

Concurrent with the post-Korean War organization changes, the ARS aircraft inventory experienced continual change, mostly through modification of aircraft being retired from the active Air Force fleet. Prime examples of the Air Rescue Service "second hand" first line aircraft during the 1950's were:

The SB-17 and SB-29 which were long-range converted World War II bombers. These aircraft equipped with "air drop" life boats provided the long-range search and location capability. Recovery of the survivors, the

key element in the SAR operation life cycle, was not within the capability of these aircraft and had to be accomplished "after the fact" by other means, e. g., surface vessels, ground teams, etc.¹⁰

The SC-47 long-range search, location and recovery aircraft was modified extensively to provide long-range operations in support of specialized SAC aircrew recovery operations. This aircraft remained in the Rescue inventory until 1958. This aircraft equipped with Jet Assisted Takeoff (JATO), skis and other modifications was capable of effective recoveries from land/ice masses.¹¹

The SC-54 which entered the Rescue inventory in October 1965 was the modified Military Air Transport Service (MATS) C-54 cargo master. This aircraft, configured with internal range extension tanks, was extremely long-range and was an excellent search and location vehicle. However, like the SB-17 and SB-29 which it replaced, it did not have a recovery capability.¹²

Aircraft in the ARS fleet during the fifties included the old work horse SA-16 (HU-16) which was the only fixed-wing aircraft in the Rescue inventory capable of search, location and recovery. This triphibian "B" model aircraft, an improved version of the Korean War "A" model, despite its age, served valiantly in ARS through late 1968 and until the introduction of long-range helicopters provided the primary overwater aircrew recovery

capability in SEA.¹³

The helicopter, long recognized as the optimum recovery vehicle and having proven its worth during the Korean War, did not have the flexibility or growth potential -- due to technological "state-of-the-art" -- to survive in the peacetime ARS environment. The prime limitations of range and speed definitely restricted the helicopter's participation/value in a global mission. The helicopters in the Rescue inventory (H-5H, SH-19 and SH-21B) suffered from these limitations. Numerous studies were conducted to develop a helicopter/fixed-wing system which could satisfy the global aircrew recovery demands.

"Peggy" Sub

In 1957, one such study was prepared on "Pick-a-Back" operations. This study was based on tests conducted using the H-5H helicopter and the C-119 aircraft. The tests were designed to determine the feasibility of either towing and/or carrying helicopters "Pick-a-Back" style. Although the tests were unsuccessful, the company conducting the tests concluded ". . . It is felt that with a better airplane-helicopter combination a useful rescue system could be created through the proper application of principles developed in this study."¹⁴

Therefore, rescue entered the 1960's with a "mixed fixed" force of SC-54's, SA-16B's and the short-range, slow-speed SH-19/SH-21B helicopters,

none of which could satisfactorily perform combat aircrew recovery operations. The trend had been de-escalation of Rescue capability, primarily a result of budgetary limitations. The fact that the combat mission had been deleted from the mission directive further attributed to the degradation of the marginal capability in-being.

By 1961, the last of the helicopters were phased out of the active inventory, and in September 1961, the ARS fleet consisted of 58 fixed-wing aircraft (SA-16B/SC-54B).

RESCUE - POST-KOREA

FOOTNOTES

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2. Alfred Guldberg, A History of the United States Air Force (1907-1957), p. 153.
3. Vandegrift, op. cit., p. 85.
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7. Ibid., p. 168.
8. Ibid., p. 169.
9. Briefing, General Estes and Colonel Brooks to CSAF, Subj: Combat Recovery Operations in Southeast Asia, 28 Oct 1965, p. 1.
10. Vandegrift, op. cit., p. 96.
11. Ibid., p. 101.
12. Ibid., pp. 96-97.
13. Ibid., p. 98.
14. Study, TR 11-100 Study of Pick-a-Back Operations of an H-5H Helicopter on a C-119B Airplane, Theibolt Aircraft Company Inc., 10 Oct 1957, Part II, p. 19.

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TASK ANALYSIS

1965 - 31 March 1968

1. LIST AND DESCRIBE EACH ASSIGNED TASK:

To clearly understand the aircrew recovery task for the 1965 - 31 March 1968 time frame, some information must be provided on the evolution of the task.

The requirement for ACR in SEA was first identified in 1961 with the arrival of JUNGLE JIM/FARMGATE detachments. Increased joint USAF and Vietnamese air activities in the hostile environments generated requirements for Search and Rescue (SAR) forces to extract/recover survivors and/or deceased personnel from downed aircraft. However, the semi-covert nature of this operation prevented any SAR force introduction.¹

By 1 April 1962, U. S. air operations in Vietnam had increased to the point where the Pacific Air Rescue Center (PARC) established a detachment at Tan Son Nhut AB. The task assigned to this unit was to control and coordinate SAR efforts. Because of communications and other difficulties during the 1962 - 64 period the recovery of downed aircrew personnel was often completed before the SAR Control Center (JSARC) was aware of the fact that an aircraft had been lost. Delays in the notification of loss of aircraft and the initiation of the SAR effort resulted in many of the rescue efforts becoming body recovery missions.²

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The JSARC was not only severely limited in the performance of its mission by the extremely poor/non-existent communications, but also by the complete absence of professional SAR forces. This required the JSARC to be totally reliant on secondary SAR forces, which were provided by the U.S. Army and the U.S. Air Force on a non-interference basis. These make-shift SAR forces were not equipped to perform the rescue/recovery mission and were subject to recall at any time to accomplish their primary combat mission.

Numerous ACR missions during the 1962-64 period had to be supported/conducted by ground parties, due to the inability of existing helicopters to effect recovery. The JSARC Commander and/or other JSARC personnel along with supporting U.S./Vietnamese ground forces would be airlifted to the vicinity of the downed aircraft/SAR objective. From that point, they usually had to chop their way through jungle growth to extract survivors, usually while under fire from enemy forces.³ From this initial experience generated the validated requirement for professionally trained SAR personnel and specialized search, location and recovery aircraft/systems capable of providing realistic aircrew recovery throughout the diverse topographical features of Southeast Asia.

It should be noted that professional SAR forces equipped with HH-43 helicopters did arrive in-theater during the 1962-64 time period. These

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forces were operational in the Republic of Vietnam and Thailand during the last five months of 1964 and performed both LBR and ACR missions. Their accomplishment of the ACR task was thoroughly addressed in the ARRS Corona Harvest Volume III entitled "Local Base Rescue (LBR) in Southeast Asia" and will not be reiterated in this volume.

The overall task assigned to ARRS as spelled out in Air Force Regulation (AFR) 23-19 indicated that ARRS would provide a world wide capability to search for, locate and recover personnel and aerospace hardware in support of USAF and other Department of Defense (DOD) aerospace operations. With respect to combat operations ARRS was tasked by AFR 23-19 to maintain combat personnel recovery forces for the rescue of military personnel from hostile areas in accordance with AFR 64-3. In addition ARRS was to provide and operate the SAR component in the Air Operations Center (AOC) supporting contingency operations.⁴ The task of providing the SAR component in the AOC was thoroughly addressed in ARRS Corona Harvest ^{Report} Volume II, entitled "Joint Search and Rescue Center (JSARC) in Southeast Asia" and will be addressed in this volume only as it pertains to the SAR control provided by the airborne mission control aircraft and the on-scene commander in support of the aircrew recovery task.

AFR 64-3 entitled "Wartime Search and Rescue (SAR) Procedures", covered little with respect to tasks other than to indicate that the objective

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of SAR was to aid and recover personnel in distress, which was the same in wartime as in peacetime. It stated that the wartime objective was to recover personnel in order to deny the enemy a source of intelligence information and to contribute to the morale of the combat forces.⁵

In support of ACR, 7th Air Force Manual (AFM) 64-1 designated the JSARC as the controlling and coordinating agency for SAR activity in the 7th AF area of responsibility. JSARC was tasked to provide overall mission direction and control of SAR forces in SEA for the Commander, 7th AF. The JSARC was responsible to insure that the Commander, 7th AF was fully briefed on all aspects of every mission.⁶

To accomplish the SAR control task, the JSARC was assigned two Rescue Control Centers (RCC), one at Son Tra AB in the RVN and one at Udorn, Thailand. The RCC's were tasked to provide regional SAR control and to provide adequate rescue support to emergency and preplanned requirements.⁷ The RCC's evaluated all distress notifications on incidents occurring in their area of responsibility and initiated appropriate response.⁸

The ARRS operational SAR forces were tasked for a variety of missions depending upon the type of equipment assigned to the units.

The HU-16 units were tasked to provide a water ACR capability in the Gulf of Tonkin, and to perform an airborne SAR coordination function

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in the Gulf and along the Laotian/Thailand border.

The HC-54 unit was tasked to provide an airborne mission coordination/control capability and to provide a communications relay capability between the JSARC, RCCs, and the Search and Rescue Task Force (SARTF).

The HC-130 unit was tasked to provide an Airborne Mission Commander (AMC) capability which functioned as the direct representative of the JSARC. The AMC was tasked to provide overall control of SAR mission activity, evaluate mission requirements, coordinate SAR task force compositions and activities, monitor mission progress and maintain long-range communication contact with the JSARC and/or RCCs.⁹ In addition the HC-130 units were to provide aerial refueling for the HH3's/53's.

The AMC monitored and controlled the SAR effort by:¹⁰

- (a) Establishing the location of the object.
- (b) Determining forces and equipment required for the Rescue/recovery operations.
- (c) Providing navigational aid to the SARTF.
- (d) Monitoring weather.
- (e) Providing long range communications capability.
- (f) Controlling and maintaining mission and communications discipline.

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(g) Obtaining and committing secondary SAR forces as required for mission prosecution. The AMC evaluated each phase of the rescue mission and, in coordination with element leaders, decided the required course of action. Immediate operational control authority rested with the AMC except when the mission was controlled directly by the JSARC/RCC and an AMC was not used.

The HH-3/53 units were tasked to provide a combat aircrew recovery capability that could respond quickly to SAR/recovery requirements in both friendly and hostile environments. ¹¹

2. FOR EACH TASK:

a. HOW DOES TASK RELATE TO CURRENT CONCEPTS?

Prior to 1965, correlation of the ACR task to current concepts was primarily a matter of determining the historical enigma of "which came first, the chicken or the egg?". Essentially, the basic task of providing aircrew recovery was one of the primary missions of ARRS in accordance with AFR 23-19.

The objective of ARRS, regardless of equipage, was to provide optimum support of this mission within operational capabilities/parameters of assigned resources. However, the environment in SEA, coupled with obsolete SAR equipment that extremely limited operational flexibility, re-

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stricted the development of a real time ACR capability.

The concepts established during the initial ACR effort in SEA were a derivative of archaic rationale which considered that SAR procedures and techniques for use in friendly territory also applied to hostile territory.¹² The military/political constraints in the SEA conflict put this concept to the test, wherein lack of established combat lines of demarkation resulting from Viet Cong guerrilla tactics rendered the entire RVN land mass hostile/^{SD} potentially hostile. Therefore, the basic premise of providing ACR under the concepts that existed during 1962-64, was fallacious, and in many instances when ACR capability was required - futile.

The task of ACR continued to relate to the concepts of the 1962 - 64 era well into the 1965 - 68 time period. In late 1965, the ACR task gradually began to fall more in line with current concepts due primarily to the gradual introduction of improved equipment; more feasible concepts of operation that were tried and proven on actual SAR missions; and more positive direction and support of the SAR mission brought about by the issuance of numerous higher headquarters directives.

The first meaningful guidance and support of the combat SAR mission in SEA was outlined in the 2d Air Division Regulation (2d ADR) 55-20 dated 14 January 1965, 2d ADR 55-20A dated 1 April 1965 and 2d ADR 55-20

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dated 4 March 1966. These directives provided guidance and support in that they established operating procedures for the conduct of joint SAR operation, taking cognizance of the doctrine of the services represented. Specific SAR responsibilities were outlined for pertinent Commanders at all echelons, SAR control procedures were established and direction provided for the utilization of secondary SAR forces.¹³

Seventh Air Force Regulation 64-2 dated 5 April 1967, was a tri-service directive, which further strengthened the SAR force position as did the 7th Air Force Manual 64-1 published on 1 March 1968. This manual spelled out in excellent detail SAR organization, command and control, composition of the search and rescue task force, the concept of operations, facilities and equipment utilized and the procedures employed in the conduct of the search and rescue and aircrew recovery mission in Southeast Asia.¹⁴

The situation in Southeast Asia exemplified the requirement for an effective, long range ACR vehicle. The increasing high risk environment in SEA could no longer condone the use of HH-43 helicopters for deep penetration ACR missions. Although the 2d Air Division/7th Air Force JSARC was assigned the responsibility for wartime SAR in SEA, long range recovery vehicles in sufficient numbers were not available to perform the ACR task. ACR missions were directed by SAR controllers, but because of

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the lack of sufficient aircrew recovery vehicles, SAR missions were often accomplished by secondary SAR forces. This lack of adequate ACR vehicles, available 24 hours a day on immediate alert, was detrimental to the desired effectiveness of rescue operations in SEA.¹⁵

It has been stated previously that the ACR task encompassed a variety of sub-tasks assigned to ARRS units, dependent upon the type of equipment assigned. No attempt will be made to relate these sub-tasks to current concepts, only the overall task of aircrew recovery. This task for the most part related to the concepts that existed during the 1966 - 68 period, and perhaps failed to relate only in the sense of the number of SAR vehicles available. Tactics and techniques employed to prosecute the ACR mission will be addressed in the Hardware Analysis of this volume with only a broad overview of concepts presented in this section.

The limited SAR resources in SEA necessitated a high degree of cooperation between rescue units and all U.S. military and allied forces. The Commander in Chief, Pacific (CINCPAC) directed component commanders to assist each other in the prosecution of SAR missions. The JSARC/RCC's/ Airborne Mission Commander/7th Fleet SAR controller, coordinated all rescue operations to preclude duplication of effort, prevent over commitment of SAR forces and assure efficient operations.¹⁶

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A team effort was required to effectively employ rescue and tactical forces in aircrew recovery, search, and rescue operations. This team, the SAR task force, was a composite of two or more of the following elements: The search objective; Rescue Combat Air Patrol (RESCAP) aircraft; Rescue Escort (RESCORT) aircraft; control aircraft; recovery aircraft and ground parties. The composition of the SARTF was determined by the nature of the objective, geographical location, topographical features and weather. Thus, the SARTF had to be tailored to meet the specific requirements of the particular mission.¹⁷

The HH-3/53 helicopters were the primary recovery vehicle in I Corps, "out-of-country" areas and in the Gulf of Tonkin. The JSARC prepositioned these helicopters on forward strip alert or airborne orbit to provide maximum rescue coverage of strike aircraft. Over land areas the helicopters normally operated in pairs (although one may be in orbit) with the low helicopters making the recovery and the high helicopter providing backup capability. Over the Gulf of Tonkin normally only one helicopter was in orbit with backup provided by Navy helicopters or by helicopters at the Forward Operating Locations (FOL).¹⁸

U.S. Navy surface vessels and submarines operating in the Gulf of Tonkin possessed an inherent rescue/recovery capability and were integrated into the rescue system in SEA. SAR activities of these resources

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were coordinated and controlled by the U.S. Navy Carrier Task Group (CTG) in the Gulf of Tonkin. U.S. Navy helicopters provided rescue helicopter coverage to support its operation in the Gulf of Tonkin and along the coastline of North Vietnam. This resource was a primary rescue capability in its area of operation. Extensive Naval SAR operations were coordinated with the JSARC and were conducted in conjunction with USAF SAR forces, when necessary.¹⁹

Motor vehicles and ground parties were the remaining means of personnel recovery. These resources were provided by military and civilian agencies upon request of the JSARC and were normally employed when aerial recovery methods were impractical.²⁰

RESCAP aircraft, normally tactical strike aircraft, formed a protective shield to protect the SARTF and SAR objective from hostile activity while the rescue vehicle was enroute. RESCAP was continued during the recovery operation and withdrawal of the rescue force to a non-hostile area. These aircraft would, within the Rules of Engagement, attack hostile forces attempting to harm or capture a downed airman. RESCAP aircraft would not engage in tactical operations at the rescue scene except as required to support the rescue operation. RESCAP aircraft could be derived from the strike force or dispatched specifically in response to the rescue mission requirement.²¹

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RESCORT aircraft were tactical fighters, normally A-1's, under the operational control of the JSARC or subordinate rescue mission control unit. They were tasked to escort, guide, and protect the rescue vehicle to and from the rescue scene and during the recovery operations. They also conducted electronic and visual searches for the SAR objective and fired on hostile forces to suppress enemy activity during the recovery operation. RESCORT aircraft would not engage in tactical operations except as required to support the rescue operation. The Air Force call sign for A-1 RESCORT aircraft was "Sandy". Additionally, armed helicopter gunships frequently flew RESCORT for "in-country" SAR missions, and the U.S. Navy furnished fighter aircraft in the Gulf of Tonkin area.²²

The individual to be recovered was considered to be a vital part of the SARTF. His actions and proper use of survival and communications equipment materially assisted the rescue forces in effecting his recovery. He used his survival radio and visual signalling devices to help the recovery force pinpoint his position. In addition, he relayed the position of hostile forces, terrain features, wind direction, his physical condition and any other information which would aid in his recovery.²³

The rescue mission control agencies were the JSARC, its subordinate RCCs and the U.S. Navy CTG 77.0. The functions of these agencies were outlined in ARRS Corona Harvest Volume II entitled "Joint Search and

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Rescue Center (JSARC) in Southeast Asia". The JSARC was known as "King" the Son Tra RCC as "Queen" and the Udorn RCC as "Compress". The U. S. Navy CTG 77.0.1 used the call sign "Harbormaster". These units were considered part of the SARTF to the extent that they provided overall control and coordination of rescue efforts.²⁴

Upon receipt of distress notification, recovery vehicles were dispatched to the scene from airborne orbit or ground alert positions. RESCORT aircraft were dispatched with the recovery vehicle to help locate the objective and to suppress hostile activity if necessary. RESCAP aircraft were diverted or dispatched to protect the SAR objective until arrival of the recovery force, during the recovery operations and during withdrawal of the recovery force. At the conclusion of the mission, rescue forces assumed their SAR readiness posture and RESCAP resumed their normal operations.²⁵

Aircrew recovery helicopters were equipped as necessary to recover survivors from any environment. One of the primary devices was the forest penetrator. It was streamlined to penetrate the jungle canopy and had seats which opened to accomodate one, two or three survivors. Procedures were developed wherein a pararescueman could assist and be hoisted with an injured survivor on the penetrator. For over water missions, the "Horse-collar" rescue seat or rescue basket were used for the pick up. A rescue or stokes litter was normally used to hoist seriously injured survivors aboard

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the helicopter.²⁶

b. WHAT WAS PURPOSE (NATIONAL/MILITARY OBJECTIVE) OF DOING TASK?

The national/military objectives of the combat ACR task were essentially the same as those cited for the LBR mission. They were to recover downed aircrew personnel in order to conserve this very valuable resource; to deny the enemy a source of intelligence information; and to contribute to the morale of the combat forces.²⁷ The increased morale of the tactical forces which generated as a result of ACR task accomplishment certainly resulted in increased mission effectiveness.

c. WAS ASSIGNMENT OF THIS TASK TIMELY?

The assignment of the ACR task must, along with the LBR task, be considered as having been assigned on a timely basis in that ARRS units in SEA had been directed to accomplish this mission prior to the 1965 - 68 period. However, timely assignment of a task must also include the wherewithal to accomplish the "job at hand" and when viewed in this context the assignment of this task cannot be considered as timely. Although secondary SAR forces provided a valuable contribution to the overall SAR effort, continued reliance on the use of these forces, during the 1965 - 66 period, retarded the establishment of a well trained, properly equipped SAR force.

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d. WHAT WERE THE CONSTRAINTS?

The constraints that precluded effective accomplishment of the ACR task must also solely be addressed in terms of inadequate/insufficient equipment. This certainly applied to the SAR control function which was hampered by communications problems throughout most of the 1965 - 68 time frame. This, in numerous instances, precluded effective utilization of available SAR forces and on occasion contributed to the failure to effect recovery. Certainly the type and number of SAR vehicles available to prosecute the ACR mission, during 1964 - 66, imposed severe constraints. The following quick reference to when the SEA requirement for particular SAR helicopters and aircraft was identified and the numbers required by FY quarter, indicated that in almost every case a serious "behind the power curve" situation existed. In addition the HH-43's, HH-3's and HH-53's had severe limitations with respect to prosecuting the deep penetration and extremely hostile environment ACR missions, as did the HU-16's and HC-54's with respect to providing an effective airborne SAR control platform.

The HH-43 role in support of the ACR task was thoroughly addressed in ARRS Corona Harvest ^{Report} Volume III, entitled "Local Base Rescue (LBR) in Southeast Asia" so it will suffice to state here that the actual HH-43B's/F's on hand continually fell far below the required. For example a requirement for 20 HH-43B's and 13 HH-43F's was established in FY 1/66 at which time

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there were 13 43B's and six 43F's in theater. The total requirement of 32 was not met until FY 3/68, due in part to the loss of six.

The HU-16 situation reflected a much better picture in that a requirement for six was established in FY 4/64 and filled from Temporary Duty (TDY) resources in the same quarter. The "on hand" aircraft closely paralleled the required number throughout the total period that the HU-16 was used in SEA, despite the loss of two aircraft (Ref Tab A, Page 36)

The HC-54 requirement for three aircraft was established in FY 4/64, but no aircraft were assigned to SEA until FY 4/65. For the comparatively short period (nine months) that the aircraft remained in SEA there was no significant deficit (Ref Tab B, Page 37)

The requirement for six heavy lift helicopters (CH-3C/HH-3E) for Thailand operation was identified in FY 2/64, but the first two helicopters did not arrive in theater until FY 1/66. (Ref Tab C, Page 39) The total requirement for both Thailand and the RVN was established at 32 but was reduced to 22 beginning in FY 1/68, which was not fulfilled until FY 3/68 (Ref Tab C Page 39, Tab D, Page 40)

A requirement for four HC-130's was established in FY 1/66 and increased to 11 in FY 2/66 where it stabilized. Two 130's were assigned to SEA in FY 2/66, increased to four in FY 1/67, but did not attain the

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programmed level until FY 4/67 (Ref Tab E, Page 41)

The requirement for six HH-53B's was established in FY 4/67 and increased to 19 in FY 1/68 where it stabilized. The first two 53's were received in theater in FY 1/68, increased to six in FY 2/68 with no additional helicopters received during the remainder of the period for which this report was rendered (Ref Tab F, Page 43)

e. WHAT WERE THE EXPECTED RESULTS?

With respect to the airborne SAR control function, it would be doubtful if anyone entertained any thoughts as to the capability of the HU-16 or HC-54 to effectively accomplish this mission. However, it was felt that they could provide an interim capability to perform this function until a better vehicle became available. The HU-16 was expected to accomplish water recoveries in the Gulf, but its limitations with respect to "sea conditions, survivability and over load capability left no doubt as to its total SAR capability." The HC-54 possessed no ACR capability.

The HC-130 was not designed for the SAR control function, but it had considerable growth potential and was expected, upon modification to provide an excellent airborne command post and air-to-air refueler for the helicopters. Any consideration that might have been given to the Fulton Recovery System providing a feasible combat ACR capability was soon

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dropped. The topography of SEA, time required to effect recovery with this system, and the fact that it compromised the downed aircrewman's position negated its value as an effective ACR system.

The HH-43 could not be expected to effectively accomplish the deep penetration ACR task or to survive in the more hostile environment that was normally identified with these missions. The CH-3C/HH-3C/HH-53 evolution provided improved performance and survivability and was expected to improve the overall ACR capability.

Combat experience and analysis supported the need to decrease ACR reaction times. Considering the state-of-the-art in helicopter development, this could only be achieved by aerial refueling. When the HH-53 possessed the capability for night and low visibility operation, it was expected that it would be able to perform all facets of the Southeast Asia mission on a 24 hour a day basis.²⁸

f. WHAT WERE THE ACTUAL RESULTS?

Since the very nature of the combat SAR mission precluded preplanned execution orders, the reaction to recovery requirements must obviously take formation after the fact. The knowledge that an aircraft was down emanated from many, and often varied, sources such as a wingman, a ground sighting, etc.²⁹

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Employment of rescue forces in support of combat operations in Southeast Asia was predicated on establishing the SAR/ACR force immediately adjacent to the objective areas along specified tactical aircraft areas of operation. Prior to aerial refueling, prepositioning of the helicopter forces was dependent solely upon the availability of forward operating bases, and combat aircrew recovery capability was limited by the helicopter fuel range. As a result, reaction times in response to missions deep into North Vietnam were adversely affected.³⁰

These limitations were offset by the introduction of the helicopter and tanker team. Rescue employed the HH-3E and HH-53 on daily airborne alert in the Gulf of Tonkin and along the Laotian border. These helicopters established orbital tracks immediately adjacent to North Vietnam and in close proximity to strike aircraft penetration and withdrawal routes. The duration of these orbits was established to provide maximum SAR coverage and immediate response to ACR requirements during peak strike periods. They were extended as mission requirements dictated, by in-flight refueling, without compromising the radius of action of the helicopter. When responding to an ACR mission, they were refueled immediately prior to the mission, during penetration and upon return from North Vietnam. These operational concepts provided maximum extended range to our helicopters.³¹

By combining the capabilities of the HC-130P long-range tanker

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aircraft and the helicopters into a recovery team, it produced a quantum jump in rescue capabilities and operational concepts. This provided combat rescue the flexibility of operations to react to the long-range - high altitude - and rapid reaction requirements.³²

Despite the improved capabilities provided by the HC-130/HH-3E/HH-53 team concept, lack of sufficient SAR vehicles remained as the major deterrent to fulfilling the total ACR requirement. This was represented by the peak level of conflict, expressed in out-of-country sorties of 18,000 per month and in-country sorties which had reached 58,000 sorties per month. In short, the 3d ARRGp, at end March 1968, was supporting the 1968 level of tactical sorties with the number of SAR vehicles programmed for 1965.³³

g. WHAT WERE THE ALTERNATIVES RELATIVE TO THE ALLOCATION AND/OR EXECUTION OF THE TASK?

Perhaps the simplest solution to this problem would have been to provide an improved ACR capability on a more timely basis. However, there were no doubt many logical reasons as to why this could not be accomplished. Production/modification lead times, budgetary limitations and many other considerations entered into the decision to support the ACR task in SEA with the equipment that was utilized. One must believe that at least in some areas higher priorities could have been provided in support of the ACR mission. If this was the case then the decision makers must take a "new

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look" at how priorities are established.

The root of the problem can again be traced to the deletion of the Rescue wartime mission and the thinking that supported the concept that wartime SAR was merely an extension of peacetime equipment and procedures. This one action, perhaps more than any other, created a technological void in personnel recovery systems and seriously impacted on the capability of the SAR forces to effectively support the modernized tactical forces in SEA.

3. ADDITIONAL CONSIDERATIONS: None.

4. SUMMARIZE LESSONS LEARNED.

a. During the 1962-64 time frame and well into the 1965-68 period, the JSARC did not have the communications capability to effectively control ACR missions.

Although this was a JSARC deficiency and was cited in ARRS ^{Report} Corona Harvest, Vol II, entitled "Joint Search and Rescue Center (JSARC) in Southeast Asia, "it has been restated as a lesson learned in this volume because of its serious impact on the ACR mission. These communications deficiencies were not only prevalent in the JSARC but in the RCC's and the HU-16/HC-54 airborne SAR control aircraft as well.

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b. Inadequate for the task and insufficient numbers of SAR vehicles precluded effective accomplishment of the ACR mission in SEA.

The inadequacy of the recovery vehicles assigned to perform the ACR task posed a serious problem until well into the 1965-68 time period. In addition, the number of SAR aircraft required to provide effective ACR support was inadequate, which necessitated the use of secondary SAR forces that were ill-trained and ill-equipped for the ACR mission.

c. Despite the introduction of new SAR equipment (HH-3/53), the aircrew recovery rate did not improve.

The introduction of HH-3's and HH-53's into SEA certainly improved the SAR capability, but by the time they arrived in theater the increased defense posture in North Vietnam (NVN) almost prohibited recoveries in those areas where the majority of aircraft were lost, namely Route Package V and VI. It must be noted that the introduction of these helicopters did provide a better capability for less hostile areas and as such improved the recovery rate over and above the capabilities of the previous equipment.

5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS.

The conceptual and doctrinal recommendations listed below, subparagraphs

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a through c, generally support, in the same alphabetical order, the lessons learned that have been listed above:

- a. An effective SAR control network must be considered as the "first order of business" when establishing a SAR capability in a combat environment, particularly when the nature of the conflict results in deep penetration ACR efforts into a hostile environment.

A complex rescue mission control system was required by the nature of the mission, the composition of the SARTF and the size of the area of responsibility. It was essential that each control element be knowledgeable concerning the control responsibility and authority of all elements. The various functions of mission control were delegated to the lowest practical control element to facilitate expeditious mission prosecution and immediate response to changing requirements of the mission, however, the Commander, Seventh Air Force had ultimate responsibility for SAR mission prosecution. The Commander, Seventh Air Force maintained control over SAR operations through the 7th AF control center and the JSARC which were collocated at Headquarters Seventh Air Force. In addition, the 7th AF control center and the JSARC had immediate access to intelligence or tactical information

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which could affect the mission. It was mandatory that complete information on mission activity be reported promptly as the mission progressed to facilitate evaluation and overall mission control by the Commander, Seventh Air Force and the JSARC.³⁴

b. SAR forces tasked to support the combat ACR mission must be provided, on a timely basis, sufficient and adequate equipment to effectively perform the task. The assignment cannot be considered timely unless the unit tasked has been provided equipment capable of accomplishing the mission with some reasonable degree of effectiveness.

c. SAR equipment must be modernized concurrently with the equipment of the tactical forces that are being supported. The practice of expensively modifying equipment that was not designed for the rescue mission does not provide an end product that possesses sufficient growth potential to meet new demands.

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TASK ANALYSIS

1965 - 31 March 1968

FOOTNOTES

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3. Ltr, Lt Col E. J. Trexler to Lt Col Gordon W. Crozier, Subj: Corona Harvest Study, undated, pp. 2-3.
4. Air Force Regulation 23-19, 14 March 1967, pp. 1-2.
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6. 7 Air Force Manual 64-1, 1 March 1968, Chapter 3, p. 4.
7. Ibid., Chapter 1, p. 1.
8. Ibid., Chapter 3, p. 4.
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10. Ibid.
11. Ibid., Chapter 3, p. 2.
12. Air Force Regulation 64-3, 1 March 1968, op. cit., p. 4.
13. 2d Air Division Regulation, 4 March 1966, pp. 1-3.
14. 7 Air Force Manual 64-1, 1 March 1968, op. cit., Change 1, p. i.
15. Ltr, Hq PARC (DOAR) to CINCPACAF (DO), Subj: HH-3C Helicopter Requirements in the Pacific Command, 3 December 1964, w/1 Atch and 1st Ind dated 9 December 1964, Atch 1, p. 1.
16. 7 Air Force Manual 64-1, 1 March 1968, op. cit., Chapter 1, p. 3.

(TASK ANALYSIS Footnotes - continued)

17. Ibid., Chapter 1, p. 3., Chapter II, p. 2.
18. Ibid.
19. Ibid.
20. Ibid., p. 3.
21. Ibid.
22. Ibid.
23. Ibid.
24. Ibid., p. 4.
25. Ibid.
26. Ibid.
27. CINCPACINST 3130.2B, 2 Sept 1967, pp. 1-2.
28. Briefing, Combat Aircrew Recovery (ACR) Briefing for Space Center.
Undated, p. 9.
29. Ibid., pp. 6-7.
30. Ibid., p. 7.
31. Ibid., pp. 7-8.
32. Ibid., p. 8.
33. Ibid., pp. 9-10.
34. 7 Air Force Manual 64-1, 1 March 1968, op. cit., Chapter 3, p. 5.

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HARDWARE ANALYSIS

1965 - 31 March 1968

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WHAT WAS USED?

In January 1965, the ACR task was being accomplished by 13 HH-43 helicopters, 4 HU-16B amphibious aircraft and opportune aircraft of any type that were available and capable of performing the mission. Sometime prior to the beginning of this time frame, it became evident that more and better equipment would be required to support the increased ACR demands. To meet those demands, the total number of HH-43's and HU-16's in SEA was increased and a variety of other recovery/recovery support vehicles were introduced throughout 1965-68. Therefore, a chronological sequence of their introduction into the theater will be presented.

The HH-43's role in the accomplishment of the ACR task will not be discussed in this volume. Their utilization and performance was thoroughly addressed in ARRS Corona Harvest^{Report}, Vol III, LBR in SEA, 20 May 1969.

HU-16:

Four HU-16's were assigned TDY to SEA in FY 4/64. These four aircraft operated out of Da Nang and Udorn until FY 1/66 when the number

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was increased to five, and they were all assigned PCS to Da Nang. That posture remained constant until FY 4/67 when the aircraft's assignment status was reverted to TDY. The total number of HU-16's was decreased to three in FY 1/68, and the aircraft were completely withdrawn from Vietnam in the last month of that quarter. (Ref Tab A.)

HC-54:

In FY 4/65, three HC-54's were sent to Udorn AB, Thailand. The HC-54 had no recovery capability, but was used to support the helicopters that accomplished the ACR task. The number of HC-54's increased to four in FY 1/66, decreased to two in FY 2/66 and had been completely withdrawn by FY 3/66. The HC-54's were assigned in a TDY status for their entire tour in SEA. (Ref Tab B.)

HH-3:

The H-3 series helicopters were first utilized in the ACR role in FY 1/66. The Tab cited below, as the source of information for the following discussion, made no distinction between the CH-3C and the HH-3C. For clarification, only the first two H-3's were "CH's", the remainder were "HH's." The difference between the two was that the HH-3C's were modified for rescue operations as opposed to the CH-3C's cargo configuration.

Two CH-3C's were placed in Thailand in FY 1/66 to perform

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TASK: TO PROVIDE ACR (Acft Based in RVN)										SHRED-CUT HU-16B											
TIME PHASE FY		FY 64			FY 65				FY 66				FY 67				FY 68				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HU-16B	0	0	4	4	5	5	5	5	5	5	5	5	5	5	1	0	-	-	-	0
	- - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PROGRAMMED	PCS	0	-	-	-	-	-	0	5	5	5	5	5	5	5	2	0	-	-	-	0
	TDY	0	0	4	4	4	4	4	0	-	-	-	-	-	-	-	-	-	-	-	0
ACTUAL	PCS	0	-	-	-	-	-	0	5	5	5	5	5	5	5	-	0	-	-	-	0
	TDY	0	0	4	4	4	4	4	0	-	-	-	-	-	-	5	3	-	-	-	0
ATTRITION	HU-16B	0	-	-	-	-	-	-	-	0	1	0	0	1	0	-	-	-	-	-	0
PERSONNEL																					
REQUIRED	AIRCREW	0	0	33	33	33	33	33	59	59	59	59	59	59	59	59	23	0	-	-	0
	SUPPORT	0	0	47	47	47	47	47	72	72	72	72	72	72	72	72	38	0	-	-	0
ASSIGNED	AIRCREW	0	0	33	33	33	33	33	59	57	55	52	58	57	58	52	23	0	-	-	0
	SUPPORT	0	0	47	47	47	47	47	69	70	68	69	70	67	71	71	38	0	-	-	0
MAINTENANCE RATIO - 1	AIRCREW	0	0	100	100	100	100	100	98	96	93	88	98	70	99	100	100	0	-	-	0
	SUPPORT	0	0	100	100	100	100	100	95	97	94	95	97	93	99	99	100	0	-	-	0
MATERIAL																					
O/R	HU-16B	0	-	-	PCS DATA	ONLY AVAILABLE IN FY 67			-	-	0	88.2	89.8	84.3	74.1	0	-	-	-	0	
NORM	HU-16B	0	-	-	PCS DATA	ONLY AVAILABLE IN FY 67			-	-	0	5.9	8.2	9.5	7.2	0	-	-	-	0	
NORS	HU-16B	0	-	-	PCS DATA	ONLY AVAILABLE IN FY 67			-	-	0	5.9	2.0	6.2	18.7	0	-	-	-	0	
STATISTICAL OPS DATA																					
SORTIES	HU-16B	0	-	-	0	192	278	404	404	229	220	213	204	245	224	255	176	84	0	-	0
SAVES	HU-16B	0	-	-	-	0	5	9	12	6	1	6	16	0	1	0	-	-	-	-	0
- - - -	- - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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HARDWARE		TASK: TO PROVIDE AIRBORNE MISSION CONTROL (Acft Based In Thailand)																SHRED OUT: HC-54			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HC-54	0	-	0	3	3	3	3	3	5	0	-	-	-	-	-	-	-	-	-	0
PROGRAMMED	HC-54	0	-	0	3	3	3	3	3	4	2	0	-	-	-	-	-	-	-	-	0
ACTUAL	HC-54	0	-	-	-	-	-	0	3	4	2	0	-	-	-	-	-	-	-	-	0
ATTRITION	HC-54	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	-	-	-	0	26	34	18	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	-	-	-	-	0	48	54	40	0	-	-	-	-	-	-	-	-	0
ASSIGNED	AIRCREW	0	-	-	-	-	-	0	26	34	18	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	-	-	-	-	0	48	54	40	0	-	-	-	-	-	-	-	-	0
MANNING RATIO - %	AIRCREW	0	-	-	-	-	-	0	100	100	100	0	-	-	-	-	-	-	-	-	0
	SUPPORT	0	-	-	-	-	-	0	100	100	100	0	-	-	-	-	-	-	-	-	0
MATERIEL																					
O/R	HC-54	0	-	-	-	-	-	-	-	DATA NOT AVAILABLE ON TDY FORCE	-	-	-	-	-	-	-	-	-	-	0
NORM	HC-54	0	-	-	-	-	-	-	-	DATA NOT AVAILABLE ON TDY FORCE	-	-	-	-	-	-	-	-	-	-	0
NORS	HC-54	0	-	-	-	-	-	-	-	DATA NOT AVAILABLE ON TDY FORCE	-	-	-	-	-	-	-	-	-	-	0
STATISTICAL OPS DATA																					
SORTIES	HC-54	0	-	-	-	-	-	0	106	175	195	115	18	0	-	-	-	-	-	-	0
SAVES	HC-54	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
--- --	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Tab B

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long-range ACR missions. By the end of FY 3/66, one of the original CH-3C's had been destroyed; and the other one had been returned to TAC, from whom it was borrowed. The HH-3C's were introduced into Thailand in FY 2/66, and the total number reached six in FY 3/66. Following the installation of larger engines, the HH-3C was redesignated the HH-3E; and in FY 4/66, all HH-3's in Thailand had been modified.¹ The total number of HH-3E's in Thailand reached the programmed level of eight in FY 1/67. This figure remained constant throughout the time frame, except for short periods required to replace aircraft that were lost. (Ref Tab C.)

Buildup of the HH-3E force in Vietnam began in FY 1/67 with the assignment of two aircraft. The number of HH-3E's in Vietnam gradually increased and reached their programmed level of 14 in FY 3/68. (Ref Tab D.)

HC-130:

The first two HC-130H's were assigned to SEA in FY 2/66 to complement the ACR helicopter force. The number of HC-130's reached four in FY 1/67 and remained at that level until 4/67 when the programmed level of eleven was reached. During FY 3/67, all of the HC-130H's in SEA were replaced by HC-130P's; and all HC-130's subsequently assigned to the theater were the "P" model tankers. The HC-130's were based in Thailand through FY 3/67 but were all transferred to Vietnam in FY 4/67 where they remained throughout the period. (Ref Tab E.)

SECRET

HARDWARE		TASK: TO PROVIDE ACR (Acft Based in Thailand)																SHRED OUT: CH-3C/HH-3E			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	CH/HH 3C	0	6	6	6	15	15	15	16	32	0	-	-	Deleted Requirement				-	-	-	0
	HH-3E	0	-	-	-	-	-	-	-	-	-	-	-	-	0	9	8	8	8	8	8
PROGRAMMED	CH/HH 3C	0	-	-	-	-	-	0	6	6	0	-	-	-	-	-	-	-	-	-	0
	HH-3E	0	-	-	-	-	-	-	-	0	8	8	8	8	8	8	8	8	8	8	8
ACTUAL	CH/HH 3C	0	-	-	-	-	-	0	2	5	6	0	-	-	-	-	-	-	-	-	0
	HH-3E	0	-	-	-	-	-	-	-	-	0	7	8	6	6	7	8	8	8	8	8
ATRIITION	CH/HH	0	-	-	-	-	-	-	0	1/C	0	0	1/E	2/E	1/E	0	0	0	1/E	0	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	-	-	-	0	42	43	43	82	82	82	82	82	82	82	62	62	62
	SUPPORT	0	-	-	-	-	-	0	47	48	48	72	72	72	72	72	72	72	72	72	72
ASSIGNED	AIRCREW	0	-	-	-	-	-	0	18	40	41	81	81	81	77	77	80	64	64	64	62
	SUPPORT	0	-	-	-	-	-	0	38	44	45	70	71	71	70	67	68	68	68	68	69
MAINTING RATIO - 6	AIRCREW	0	-	-	-	-	-	0	43	93	95	98	98	98	94	94	94	104	103	100	100
	SUPPORT	0	-	-	-	-	-	0	81	92	94	97	98	98	97	93	94	94	94	94	95
MATERIEL																					
O/R	CH/HH	0	-	-	-	-	-	0	76.8	80.4	85.9	86.6	79.6	83.3	84.3	82.7	72.8	66.0	77.3	83.2	83.2
NORM	CH/HH	0	-	-	-	-	-	0	8.9	9.0	4.6	7.4	5.9	10.3	10.0	11.1	7.0	17.5	16.9	11.5	11.5
NORS	CH/HH	0	-	-	-	-	-	0	14.3	10.6	9.5	6.0	14.5	6.4	5.7	6.2	20.2	16.5	5.8	5.3	5.3
STATISTICAL OPS DATA																					
SORTIES	CH/HH	0	-	-	-	-	-	0	208	235	444	609	783	694	520	582	512	465	275	335	335
SAVES	CH/HH	0	-	-	-	-	-	0	3	8	34	30	17	41	23	17	12	13	86	16	16
REFUELINGS	CH/HH	0	-	-	-	-	-	-	-	-	-	-	DATA NOT AVAILABLE				4/67	1/68	3	14	65

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Tab C

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HARDWARE		TASK: TO PROVIDE ACR (Acft Based in RVN)												SHRED-OUT HH-3E							
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HH-3E	0	-	-	-	-	-	-	-	-	-	-	0	11	32	14	14	14	14	14	14
PROGRAMMED	HH-3E	0	-	-	-	-	-	-	-	-	-	0	6	8	8	10	14	14	14	14	14
ACTUAL	HH-3E	0	-	-	-	-	-	-	-	-	-	-	0	2	4	5	9	8	10	14	14
ATTRITION PERSONNEL	HH-3E	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2/E	0	0
REQUIRED	AIRCREW	0	-	-	-	-	-	-	-	-	-	-	0	19	33	33	83	83	80	108	108
	SUPPORT	0	-	-	-	-	-	-	-	-	-	-	0	34	43	48	91	91	91	123	123
ASSIGNED	AIRCREW	0	-	-	-	-	-	-	-	-	-	-	0	32	32	50	79	80	70	114	106
	SUPPORT	0	-	-	-	-	-	-	-	-	-	-	0	38	41	49	88	93	90	119	118
MANNING RATIO -	AIRCREW	0	-	-	-	-	-	-	-	-	-	-	0	168	97	151	95	96	88	105	98
	SUPPORT	0	-	-	-	-	-	-	-	-	-	-	0	112	95	102	96	102	99	97	96
MATERIEL																					
O/R	HH-3E	0	-	-	-	-	-	-	-	-	-	-	0	84.0	73.1	51.4	72.1	68.0	59.9	65.7	66.2
NORM	HH-3E	0	-	-	-	-	-	-	-	-	-	-	0	5.1	6.2	8.2	22.6	15.0	23.6	23.2	26.8
NORS	HH-3E	0	-	-	-	-	-	-	-	-	-	-	0	10.9	20.7	40.4	5.3	17.0	16.5	11.1	7.0
STATISTICAL OPS DATA																					
SORTIES	HH-3E	0	-	-	-	-	-	-	-	-	-	-	0	189	526	454	483	892	840	1012	1001
SAVES	HH-3E	0	-	-	-	-	-	-	-	-	-	-	0	0	7	40	25	93	39	95	70
REFUELINGS	HH-3E	0	-	-	-	-	-	-	-	-	-	-	DATA NOT AVAILABLE - 4/67				1/68	1	54	46	

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Tab D

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HARDWARE		TASK: TO PROVIDE AIRBORNE MISSION CONTROL (Aircraft based in Thailand 2/66 thru 3/67) SHRED-OUT: HC-130H/P (Aircraft based in RVN 4/67 thru 4/68)																				
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
REQUIRED	HC-130H	0	-	-	-	-	-	-	0	4	11	11	11	11	11	0	-	-	-	-	0	
	HC-130P	0	-	-	-	-	-	-	-	-	-	-	-	-	0	11	11	11	11	11	11	
PROGRAMMED	HC-130H	0	-	-	-	-	-	-	0	4	4	4	4	6	0	-	-	-	-	-	0	
	HC-130P	0	-	-	-	-	-	-	-	-	-	-	-	0	11	11	11	11	11	11	11	
ACTUAL	HC-130H	0	-	-	-	-	-	-	0	2	2	2	2	4	4	0	-	-	-	-	0	
	HC-130P	0	-	-	-	-	-	-	-	-	-	-	-	-	0	4	11	11	11	11	11	
ATTRITION	HC-130H/P	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
PERSONNEL																						
REQUIRED	AIRCREW	0	-	-	-	-	-	-	0	33	33	33	63	63	172	172	172	172	154	154		
	SUPPORT	0	-	-	-	-	-	-	0	67	67	67	98	98	234	234	265	265	219	219		
ASSIGNED	AIRCREW	0	-	-	-	-	-	-	0	33	33	33	62	62	108	129	148	129	126	119		
	SUPPORT	0	-	-	-	-	-	-	0	67	67	67	96	96	128	196	237	239	227	203		
MANNING RATIO - %	AIRCREW	0	-	-	-	-	-	-	0	100	100	100	98	98	63	75	86	75	82	77		
	SUPPORT	0	-	-	-	-	-	-	0	100	100	100	98	200	55	83	89	90	103	93		
MATERIEL																						
O/R	HC-130H/P	0	-	-	-	-	-	-	0	-	-	0	0	0	77.6	84.4	89.7	91.7	86.5	91.6		
NORM	HC-130H/P	0	-	-	-	-	-	-	0	-	-	0	14.1	13.5	10.2	13.8	9.1	8.1	10.6	7.4		
NORS	HC-130H/P	0	-	-	-	-	-	-	0	-	0	100	85.9	86.5	12.2	1.8	1.2	0.2	2.9	1.0		
STATISTICAL OPS DATA																						
SORTIES	HC-130H/P	0	-	-	-	-	-	-	-	0	76	172	230	232	264	524	661	739	824	751		
SAVES	HC-130H/P	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
REFUELINGS	HC-130P	0	-	-	-	-	-	-	-	-	-	-	DATA NOT AVAILABLE			-	4/67	1/68	9	143	208	

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Tab E

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HH-53:

Two HH-53B helicopters arrived in Thailand during FY 1/68 and reached their programmed level of six during the next quarter. That figure remained constant through 31 March 1968. (Ref Tab F.)

The HH-3, HH-53 and HC-130 were all assigned to SEA in a PCS status, with a primary function of ACR.

a. WHY WAS IT SELECTED?

HU-16:

The HU-16 has selected to provide a water ACR capability in the Gulf of Tonkin and to perform an airborne SAR coordination function over the Gulf and along the Laos/Thailand border. The U.S. Naval forces, operating in the Gulf of Tonkin, had a limited ACR capability in the form of helicopters operated from surface vessels; however, they could not fully support the increased air operations over North Vietnam. The helicopters within the ARRS inventory did not have the range to provide that support until the HH-3 became a reality for SAR forces. The HU-16's were available, within the ARRS inventory, and stationed nearby in Okinawa and the Philippines. Besides the capability to remain on orbit for ten or more hours, the nearness of support facilities made the HU-16 the most suitable vehicle to perform the tasks until better equipment became available. Also, the HU-16 was the only long-range vehicle, on hand, that had a water

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HARDWARE		TASK: TO PROVIDE ACR (Acft Based in Thailand)																SHRED-OUT HH-53B			
TIME PHASE		FY 64				FY 65				FY 66				FY 67				FY 68			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIRED	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	19	19	19	19
PROGRAMMED	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	6	6	6	8
ACTUAL	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	6	6	6
ATTRITION	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
PERSONNEL																					
REQUIRED	AIRCREW	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	63	63	63	48	48
	SUPPORT	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	71	71	71	71	71
ASSIGNED	AIRCREW	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	40	62	62	62	62
	SUPPORT	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	54	54	71	71	71
MANNING	AIRCREW	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	63	98	129	129	129
RATIO - %	SUPPORT	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	76	76	100	100	100
MATERIEL																					
O/R	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	40.4	46.7	58.1	67.8	67.8
NORM	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	17.6	20.9	12.8	12.8
NORS	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	39.2	35.7	21.0	19.4	19.4
STATISTICAL OPS DATA																					
SORTIES	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	89	268	181	181	181
SAVES	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	73	8	8	8
REFUELINGS	HH-53B/C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	4/67	1/68	5	75	97

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Tab F

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recovery capability.

HC-54:

In FY 4/65, as the ACR requirements extended deeper into northern Laos and North Vietnam, it became impossible for the ground SAR control centers to coordinate or direct SAR efforts within those areas. Radio contact could not be maintained between the control agency and the recovery forces as the distances between them grew. The need for a better airborne control agency was evident. It was also evident that positive mission control should be exercised by an agency closer to the source capable of evaluating existing conditions and employing recovery forces. That function could not be effectively accomplished by an active aircrew member; thus, the Airborne Mission Commander concept was born.² Then the problem arose as to which aircraft would provide the most suitable airborne control center. The ideal vehicle would have been a long-range, high altitude aircraft that was designed for operations in a combat environment. Additionally, the aircraft should provide a suitable work area equipped with the necessary maps, charts, communications equipment, etc. ARRS did not have an operational capability in such an aircraft at this time. Two TDY HU-16's had been performing a SAR coordination function along the Thailand/Laos border, but they did not have the space required to effectively accomplish the SAR control function. Also, the increased ACR demands in the Gulf of Tonkin required their

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services in that area. The ARRS HC-130 conversion program was in progress, but there were not enough airframes in the inventory to permit the training of aircrews and support the SEA requirement. The HC-97's were in the ARRS inventory but were required to support the U. S. space effort. The only aircraft that remained in the ARRS inventory to support this requirement were the HC-54's that were more than 20 years old.

HH-3:

The inherent inadequacies of the HH-43 helicopters that hindered their accomplishment of the ACR task, in general, and the long-range ACR task, in particular, dictated the acquisition of a more suitable ACR vehicle. Prior to 1965, ARRS had identified the CH-3C as the most suitable "off-the-shelf" helicopter that could provide an immediate "best" ACR capability.³ Thus, the required modifications to configure the CH-3C for the ARRS mission were conceived; and production accelerated to equip ARRS with the HH-3 at the earliest possible date. The HH-3's were introduced into SEA in late 1965 and remained throughout the period.

HC-130:

When the ARRS HC-130 conversion program had progressed to an acceptable level, those aircraft were introduced into the theater. The HC-130 had been selected by ARRS, as a suitable aircraft to support peacetime SAR efforts and the U. S. space program, prior to the hostilities in SEA.

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Fortunately, the aircraft's growth potential was such that it was adaptable to many recovery support functions. The term "recovery support" was used to denote a lack of actual recovery capability. The aircraft were equipped with the Fulton Surface-to-Air Recovery System, but that method of ACR was not considered feasible in SEA.⁴ Support wise, the HC-130 provided a much better vehicle from which to accomplish the airborne mission commander function; thus, it replaced the HC-54. Also, the HC-130P tankers enabled the HH-3 helicopters to extend their ACR range and afforded the HH-3's more loiter time in the pick-up area. The air refuelable HH-3's combined with the HC-130's formed the Rescue "Team Concept" and eventually replaced the HU-16's over the Gulf of Tonkin, providing a land and water ACR capability in that area.

HH-53:

By early 1967, ARRS concluded that an ACR vehicle with increased capability over that afforded by the HH-3 was necessary. That determination was based upon the increased hostile defense environment in the primary out-of-country areas of ACR operations and the topographical features of those out-of-country areas which limited the HH-3's capability due to air refueling altitude/weight restrictions. The HH-53B air refuelable helicopter would permit air refueling at altitudes above 10,000 feet and provide an increased range/loiter capability over that of the HH-3.⁵ Therefore, ARRS

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determined that the CH-53A was the most effective vehicle available that would provide the required greater lift capacity and longer range.⁶ This helicopter was procured by ARRS as the HH-53B and arrived in SEA in September 1967.

b. WAS IT DESIGNED FOR THIS TYPE OF TASK?

HU-16/HC-54:

The HU-16's and the HC-54's were not designed for the combat SAR function; and at the time they were built, one would have hardly envisioned their participation in such an operation as faced them in SEA.

The HU-16's were designed to afford a water recovery capability, which was their primary task; however, they were not designed to provide an airborne mission coordination capability. The lack of space and back-up communications equipment negated its effective use in this task.

The HC-54's were basic cargo aircraft, modified to provide a long-range, slow-speed search capability. They were also capable of dropping survival equipment and deploying pararescue personnel. They were not designed nor equipped to accomplish the airborne mission command post task to which they were assigned. The aircraft lacked a controller position with suitable communications to direct recovery operations and did not have back-up communications equipment. A "make-shift" console

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system was installed to provide a minimum acceptable control capability.⁷

CH-3:

The CH-3C helicopters were designed as cargo vehicles. To obtain an immediate ACR capability, ARRS accepted a modified version of this helicopter as the best available when the need arose. Extensive modifications produced the air refuelable HH-3E's which, by 1967, had proven to provide only an interim combat aircrew recovery capability.⁸

The HH-3E had a normal range of 700 NM, and that range could be extended with in-flight refueling. The normal cruise speed was 110 to 120 kts with a 140 kt dash capability. Optimum altitude for refueling operations was 8,000 feet density altitude, and the combat configuration included:⁹

- (1) Armor protection on vital components and for the pilot and co-pilot.
- (2) Three M-60D machine guns with 750 rounds of ammunition per weapon.
- (3) Self-sealing fuel tanks and range extension tanks.
- (4) Air-to-air refueling probe and systems.
- (5) Rescue hoist equipped with forest penetrator.
- (6) One flight engineer who operated the rescue hoist and assisted the pararescueman in recovery operations.

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It should be noted that the in-flight refueling modification was accomplished in-theater on the initial HH-3E's deployed to SEA. Between 25 May 1967 and 23 October 1967, a total of eight HH-3E's were modified at Don Muang Airport, Thailand.¹⁰

HC-130:

Modification of the C-130 to a rescue configuration was a "mile-stone" in ARRS history. It marked the first time ARRS had received a new, first-line fixed-wing aircraft specifically equipped for their mission.¹¹ Also, modification of the C-130 was not an after-the-fact crash program to meet SEA demands but was started prior to the ARRS commitment in that conflict. Camouflage paint and the installation of the air refueling equipment did delay the introduction of the HC-130P tankers into SEA; however, they replaced the HC-130H's in the theater at the earliest possible date.¹² The aircraft had a high altitude capability, cruised at 290 kts and had a range of 4,500 NM. It was equipped with special communications and navigational gear to accommodate the rescue mission which included a UHF directional tracker. (Cooke Electric Tracker/ARD-17).¹³ A built-in manual plotting position, with redundant communications, enabled the recovery controller to plot the positions, call signs, ordnance and fuel conditions of tactical and recovery aircraft participating in SAR operations.¹⁴ Additionally, the HC-130P's were equipped with armor plating protection for critical aircraft systems and ten

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aircrew positions; and all the HC-130's were equipped with the Fulton Surface-to-Air Recovery System.¹⁵ It must be concluded that the HC-130's were designed for the type of tasks assigned.

HH-53:

The HH-53B was the last ACR vehicle added to the ARRS inventory during this time frame. That addition was in response to an urgent Military Assistance Command, Vietnam (MACV) requirement for an improved aircraft capable of surviving in a small arms and anti-aircraft fire environment. The HH-53B was similar to the HH-3E in many respects; however, its speed and hover performance was approximately 41% better. That advantage greatly improved the ACR capability in the hostile mountainous regions of North Vietnam.¹⁶

The HH-53B had a normal range of 625 NM, and that range could be extended with in-flight refueling. The normal cruise speed was 130 to 150 kts with a 170 kt dash capability, and refueling operations could be conducted at density altitudes up to 14,000 feet. The combat configuration was basically the same as that of the HH-3E. The primary difference was that the HH-53B was equipped with three GAU-2B Miniguns instead of the M-60D machine guns. Each of the GAU-2B's had 3,000 rounds of ammunition and a rate of fire of 4,000 rounds per minute.¹⁷

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It must be concluded that the HH-53B was not designed for the type task assigned. That conclusion was based on the following:

(1) Like the HH-3E, it was a cargo type vehicle, hastily modified after-the-fact to meet the demands of SEA.

(2) The most significant operational improvements over the HH-3E were the 20 kt increase in airspeed and the 6,000 foot increase in refueling altitude capability. Though significant improvements, with respect to the HH-3E, they were not significant enough, with respect to the overall combat ACR task, to justify an HH-53B classification of "designed for the type task assigned."

c. WAS IT USED PROPERLY?

HU-16/HC-54:

The HU-16's were used as water recovery vehicles in the Gulf of Tonkin. They also performed an airborne SAR coordination function in the Gulf and along the Laos/Thailand border. The HC-54's were used as forward on-scene mission command posts, along the Laos/Thailand border, to coordinate and control recovery activities as required. The HC-54's operated out of Udorn relieving the HU-16's of the SAR coordination responsibility in that area. The HU-16's and HC-54's received directions for preplanned missions from the daily 2d AD frag orders. Rescue Combat Air Patrol (RESCAP) and hostile fire suppression were furnished by tactical

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forces. While on orbit, two-way radio communications were maintained between ARRS and strike forces and with directing agencies.¹⁸ During periods of air strikes by USAF, USN and Vietnamese Air Force (VNAF), three HU-16's were positioned over the Gulf of Tonkin, north of 17° north latitude, and two HC-54's were positioned along the Laos/Thailand border. Each orbit mission was approximately ten hours duration, and those aircraft not flying were kept on immediate strip alert to provide a back up for airborne aircraft or to perform other SAR missions which might develop.¹⁹ The HU-16's and HC-54's were used properly, within their limited capabilities, when considered in terms of being the only readily available ARRS aircraft to accomplish the tasks.

HH-3/HC-130/HH-53:

As previously stated, the HH-3 replaced the HH-43 as the long-range in-land ACR vehicle; and the HH-53 later augmented the HH-3 in the accomplishment of that task. The HC-130 replaced the HC-54 as the on-scene mission command post vehicle and assumed the added air-to-air refueling role in support of the HH-3/53. The HC-130/HH-3 team replaced the HU-16 and assumed its functions over the Gulf of Tonkin. Three HU-16's remained TDY at Da Nang and shared the Gulf of Tonkin ACR task, until the HH-3 fleet could assume full responsibility for the area in September 1967.²⁰ The proper utilization of the above forces was best illustrated through the

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following description of force employment. The Gulf of Tonkin coverage was provided daily by HH-3's from Da Nang. To provide adequate coverage, two HH-3's assumed dawn to dusk strip alert at Quang Tri. One HH-3 was on strip alert at Da Nang, and single HH-3's were fragged to perform two orbits per day between the hours of 2400Z and 0800Z. The in-land ACR helicopter coverage was provided by HH-53's and HH-3's. Those helicopters were scheduled in pairs to operate from forward operating locations or Lima sites, when available, in Laos. They provided strip alert or orbits in support of strike aircraft. The orbits were established to provide helicopters on station daily during periods of high density strikes. During the latter portion of this period, most Lima sites in Laos had been overrun by hostile forces, thereby, denying the rescue helicopters use of these sites except in some instances for actual emergency conditions, and then only during daylight hours. The HC-130's were fragged daily for dawn to dusk orbits in Laos, and morning and afternoon orbits over the Gulf of Tonkin. The primary functions of the C-130's were to provide airborne mission coordination and control and refueling for the helicopters.²¹

The HH-3 that orbited in the Gulf of Tonkin area was usually escorted by USN aircraft and was refueled by either HC-130's at pre-designated times and locations or by USN vessels on station in the Gulf. That provided extended range and time on station and afforded an excellent

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off-shore capability. Since only one HH-3 at a time was on orbit in the Gulf, requirements to penetrate the North Vietnam coast line required establishment of a SAR task force. That task force contained at least two HH-3E's, or one HH-3 and a USN helicopter as well as Rescue Escort (RESCORT) and RESCAP aircraft. In many instances, the sophisticated coastal defenses of North Vietnam precluded the SAR task force from penetrating the area.²²

Prior to the loss of Lima sites in Laos, the in-land, out-of-country ACR missions were conducted by HH-3's and HH-53's. They staged from the Lima sites and were refueled by HC-130 Crown aircraft. That afforded maximum time on station and extended range for response to deep penetration and long endurance missions.²³

One HH-53 and one HH-3 were launched daily from their Lima sites to establish orbit immediately adjacent to North Vietnam. Takeoffs were planned to place the helicopters on station at the same time as the strike aircraft arrived over target. That provided strike force coverage for 15 minutes before target time to 30 minutes after, at which time the helicopters recovered at the Lima sites. The other HH-53 and HH-3 at the Lima sites maintained a strip alert posture. In the event a mission broke during the orbit period, the strip alert helicopter was scrambled to the vicinity and used as high bird. If the mission broke while both the helicopters were on

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strip alert, both were scrambled -- one as high bird, the other as low bird.²⁴

After the Lima sites were denied to rescue forces, except for emergency requirements, the difficulty of the task of providing ACR coverage for tactical forces in Laos and North Vietnam was compounded. However, it was not beyond the capability of the in-flight refueling team. Prior to the introduction of in-flight refueling, deep penetration of North Vietnam was practically impossible without using en route sites for landing and refueling. Thus, the requirement for Lima sites was established. Even after in-flight refueling became operational, the Lima sites were still utilized until their use was denied. This reduced the total daily flying time required to support the morning and afternoon orbit requirements. After the Lima sites became unavailable, rescue forces still had the capability to satisfy orbit requirements in Laos by providing orbit aircraft direct from home station to orbit positions. In-flight refueling still allowed the flexibility to respond to deep penetration missions into the heart land of North Vietnam and return to home station without intermediate stops for refueling.²⁵

Any requirement to penetrate a hostile environment required Sandy (A-1E) RESCORT and jet RESCAP. That support was required for the vulnerable helicopter to stand any chance of survival and mission accomplishment.

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The vulnerability of the HH-3 and HH-53 predicated their commitment in pairs to conduct ACR missions in hostile environments. The high bird provided backup capability to complete the mission if the low bird received damage which necessitated withdrawal, or to recover the aircrew if battle damage downed the helicopter. The Sandy RESCORT provided protection against interdiction by hostile ground forces both en route and, specifically, during the recovery operation.²⁶

Jet RESCAP insured protection of the SAR task force from interference by North Vietnamese MIGS en route to and during recovery operations. According to some mission reports, the MIG threat during ACR missions was more than a possibility. On numerous occasions, MIGS were launched against the SAR task force, but fortunately no losses were suffered from MIG actions. However, numerous SAR task force aircraft were lost to hostile ground fire and other actions.²⁷

d. DID IT PERFORM AS EXPECTED?

HU-16:

The HU-16 had been in the ARRS inventory for 15 years as of 1965. Even so, its performance of the ACR mission, in the Gulf of Tonkin, commanded the respect and admiration of every tactical fighter bomber and reconnaissance aircrew member who transited the area. The HU-16's recovered 56 personnel (ref Tab A, page 36) of which 47 were combat

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recoveries from the Gulf. Only one case could be cited where an attempted combat recovery failed.²⁸ On that occasion, the aircraft was destroyed by shore based mortar fire after landing and while effecting the recovery. The two downed crew members and the HU-16 crew, minus the radio operator and pararescueman who were killed, were later recovered by a Navy helicopter.²⁹ The aircraft's outstanding success, in a hostile environment, was largely due to the RESCAP provided and the proficiency of the HU-16 aircrews. Recoveries were made where as little as two minutes elapsed between touchdown and takeoff.³⁰ The following account of a typical water recovery in the Gulf of Tonkin was provided by a mission narrative report:³¹

On 3 June 1966 we departed from Da Nang AB, RVN at 0455 hours, in an HU-16B aircraft, to perform a precautionary combat rescue orbit over the Gulf of Tonkin and the coast of North Vietnam.

At 0825 hours a U. S. Naval Destroyer informed us that they were painting a May Day squawk about 30 miles south west of our orbit position. The destroyer then gave us radar vectors to the area of the distressed aircraft.

En-route to the scene of action we made UHF contact with the leader of a flight of F-105 aircraft who told us that his number three wingman had been hit by AA over the target, in the Dong Hoi area, and had punched out over the water.

He informed us that the downed pilot was 1 1/2 miles off the beach and two miles north of the river at Dong Hoi, that he had radio contact with the downed pilot who was drifting towards the shore and that the downed pilot was experiencing severe enemy gunfire from the shore in the form of small arms, recoilless rifle and mortar

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fire. We requested the F-105 flight to make a fire suppression run over the beach and they then informed us that the enemy fire had ceased.

I made a call in the blind over guard channel to the effect that we were a rescue aircraft on an emergency mission and for any aircraft in the vicinity to come to our assistance for the purpose of suppressing enemy ground fire. This call was immediately answered by Air Force and Navy aircraft among which we identified four A1E's, three F-105's and four F4C's.

Contact was made on guard channel with the downed pilot who was instructed to light a smoke flare and immediately upon his doing so, we made positive identification of his exact location.

The open sea condition consisted of a primary swell, five feet in height moving in the direction of 300°, a secondary swell, two to three feet in height moving in the direction of 220° and the wind out of the south at about 5 to 8 kts. In order to keep from overflying the coastline we elected to land on a heading of 200°, which was almost parallel to the primary swell but quartering into the secondary. This gave us a few bad moments on touchdown and as a result the aircraft experienced a badly damaged right elevator during the landing at 0845 hours.

Immediately after touchdown, all hell broke loose in the form of extremely severe enemy fire from the shore, several large explosions occurred within 50 yards of the aircraft and the sound of small arms fire was almost continuous. As we approached the downed pilot, the pararescueman dove into the water and with a rope tied around his waist, swam to the pilot, grasped the pilot in his arms and then the two of them were pulled to the aircraft by the flight mechanic and the flying crew chief. As they attempted to pull the pilot into the HU-16, it was found that the rope which fastened his one man dinghy to his chute harness was tangled around his legs and they couldn't pull him inside. The radio operator raced back and with his knife, cut the rope and then assisted in

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bringing the pilot and the pararescueman aboard.

During the entire period on the water, the rescap continued to pound the shore line. Although the enemy fire did not stop or even slow down, after the first flurry the accuracy of the fire deteriorated to about 10% of what it had been initially.

As soon as all were securely aboard the aircraft, a high speed taxi run was initiated directly away from the shore and almost directly into the face of the primary swell. After about a half mile, someone in the aft of the aircraft reported surface explosions rapidly approaching the aircraft from the rear. As we made a quick 60° turn to the left, we observed an explosion about 50 feet in front of the aircraft and in line with our original direction of movement. Our new heading of 360° placed us on a quartering heading to the both swell systems and going down wind however a successful take off was accomplished and a routine return was made to Da Nang.

All the crew members performed their duties in an extremely competent fashion. I have never before seen such outstanding professional cooperation, and know full well that without this excellence on the part of all the crew members, this mission could not have been successful.

Special notice must be taken of the excellent support provided by the rescap aircraft who reported in after our call on guard channel. As we departed the area I looked back and saw about a three mile stretch of shore that was completely blacked out by smoke, dust and flying debris. Smoke billows up to three of four thousand feet indicated the intensity and high explosive power of the support we received.

The HU-16's flew a total of 2,658 sorties in SEA during this time frame, and only two were lost. (Ref Tab A, page 36.) One of those lost

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was previously mentioned and the other was lost en route from orbit position to home base, cause undetermined.

It must be concluded that the HU-16's performance of the water recovery task far exceeded all expectations. On the other hand, it performed the on-scene mission coordination function just as expected. It was common knowledge that the communications equipment installed and the limitations of the crew in performing multiple duties would not effectively support large scale mission coordination or control

HC-54:

The HC-54's performance was as expected. With its make-shift installation to accommodate the airborne mission commander, and its known inherent limitations, only minimum satisfactory performance was expected. The aircraft flew 609 sorties, had no losses and made no recoveries. (Tab B, page 37 .)

HH-3:

It might be said that the HH-3 performed as expected, if the fact is considered that it was not originally designed as a combat ACR vehicle. The HH-3's flew 9,723 sorties and recovered 583 personnel during the time frame. (Ref Tab C, page 39, Tab D, page 40.) By mid-1967 approximately one-third of all Americans downed over North Vietnam had been returned to friendly

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control. Most of these recoveries were accomplished by the HH-3's.³²
In compiling that record, eight HH-3's were lost, but they continued their
daring missions within the hostile environment. (Ref Tab C, page 39.)

HC-130:

The HC-130 performed its tasks as expected, and with exceptional
ease. However, had mission requirements dictated deep penetration into
North Vietnam or had enemy airpower been a factor, the story might have
been considerably different. The HC-130's flew 3,702 sorties and suffered
no losses. (Ref Tab E, page 41.)

HH-53:

Like the HH-3, the HH-53 performed as expected, again considering
the fact that it was not originally designed for the task. The HH-53 assumed
the responsibility for the long duration missions that penetrated deeper into
the more heavily defended areas.³³ Their record for the time frame was
357 sorties, 75 recoveries and no losses. It must be remembered that the
HH-53's operated only during the last six months of this time frame.
(Ref Tab F, Page 43)

A better insight into the performance of the HH-3's, HH-53's and
HC-130's might be gained from actual mission narrative reports. A SAR
mission report for a mission flown on 13 March 1967 provided a good insight

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to HH-3/HC-130 operations.³⁴

On 13 March 1967, I was the Rescue Crew Commander of Jolly Green 24 (lowbird) when we received instructions through "Cigar" to scramble and pickup the survivors of a downed Marine H-34 helicopter. Notification was received at 1745L and we were airborne, along with Jolly Green 07 (highbird) at 1750L. The reported position of the downed aircraft was 277°/14 N. M. from channel 109 (Dong Ha) on the southern edge of the DMZ. We arrived on the scene at 1807L and contact was made with Crown 2 and Deadlock 12-0 (Huey-gunship) who was circling the area. A Marine H-46, Northbrook 50-1, had already arrived to rescue the survivors. As we watched the H-46 hovering, we suddenly saw a large bright flash 100 yards from his right side. The helicopter then rolled over on its side and crashed at 1810L. People were seen exiting the aircraft before it burst into flames.

Crown 2 advised us that two Hobo (A1E) aircraft would arrive on the scene shortly, and for us to wait for them to sterilize the area before attempting a rescue. Since I had seen the position of the groundfire that knocked down the H-46, I directed the Hobo flight in for repeated ordnance runs. They continued their passes until Sandy flight (A1E) arrived at 1835L, then the Sandy aircraft continued to expend ordnances.

The crew of Northbrook 50-1, in the meantime, was transmitting on their emergency radio and reported groundfire from all quadrants. After 30 minutes of continued passes, Sandy 5 (on scene commander), laid a smokescreen to the north to blanket heavy gunfire from that area. The copilot computed our weight vs. hovering power and dumped fuel to minimum capacity. Also at this time the tip tanks were jettisoned. As we began a descent, following Sandy 5 in, I briefed my crew to don their armor vests and to prepare for expected groundfire. The crash site was halfway up the northern slope of the east-west mountain ridge, and the mountainous area was covered by dense jungle growth and tall trees. The survivors were directed to fire a flare which pinpointed their position. An extremely high hover was

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required to provide barely enough clearance between the main and tail rotors and the high trees on the sloping hillside. The flight mechanic directed me in to the survivors as he extended the cable with jungle penetrator attached. He later told me the cable was fully extended to 240 feet. On the ground, the most seriously injured man was loaded on to the hoist. Just as the flight mechanic and the rescue specialist loaded the survivor on board, we heard nearby gunshots. Bullets began to pepper the aircraft like popcorn popping in a pan, and I immediately dumped the nose and pulled maximum power to start a climb into the smokescreen, which I hoped would provide some protection. The instant I lowered the nose to accelerate, several warning lights on the master warning panel illuminated and I smelled a pungent odor like electrical wires burning. My first thought was that we'd lost one or both engines. But within seconds all the warning lights went out except the #2 generator and the #2 transformer rectifier which were later restored to normal operation by the copilot. As we entered the smokescreen, I could dimly see a sheer vertical mountain looming directly ahead, and banked sharply to avoid it.

As we continued the climb-out, I checked the other crewmembers for injuries. The rescue specialist had been knocked down by a bullet that grazed the top of his helmet. Also he was hit by a piece of shrapnel that struck an emergency radio in his pocket, preventing an injury. The copilot and flight engineer were unhurt. Enroute back to Dong Ha, the rescue specialist applied emergency medical aid to the seriously injured survivor, who had suffered a severe head injury and a compound leg fracture during the H-46 crash. He was in extremely serious condition and the rescue specialist remarked several times that we'd better hurry, or the survivor wouldn't live. An ambulance was standing by as we landed 13 minutes after the rescue.

Investigation on the ground revealed at least 13 bullet entry holes in the fuselage. One bullet struck the generator, and another severed a hydraulic line, allowing all

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the fluid of the utility hydraulic system to escape. Two rotor blades were hit in the main spar.

Weather at the time of launch from Quang Tri was clear. At the crash site, scattered to broken cumulus clouds covered the area at 1500 feet (AGL), which hampered to some extent the effort of the A1E aircraft.

Initial notification: 1745L
Scramble take-off (Jolly Greens) 1750L
Jolly Greens arrived on the scene at 1807L
Rescue of one survivor was at 1907L
Departed area at 1907L
Jolly Greens landed at Dong Ha at 1920L

Type of terrain: 2000 foot high mountainous terrain completely covered by heavy jungle growth, brush and tall trees. Most of the trees and vegetation appeared dead, evidently as a result of defoliation. The pickup was made from the side of a 45° sloping mountain. A small stream ran through the bottom of the valley.

The first contact with aircraft in the area was with Deadlock 12-0. Hobo flight was the first Air Force aircraft to arrive after Jolly Green reached the scene. Crown 2 coordinated the SAR forces. Sandy 5 and 6 arrived later to make repeated ordnance runs with Hobo flight for the purpose of suppressing groundfire. The Hobo aircraft were hindered in the first passes by Marine F4B's who was also making low passes. A near mid-air collision resulted. Several agencies attempted contact with the jets, but were unsuccessful.

Hostile action was extremely intense. The downed aircrews were completely surrounded on all sides by hostile troops, who possessed small arms and automatic weapons.

Another mission report covering a SAR mission flown on
14 January 1968 outlined how it was in the HH-53/HC-130 operation: ³⁵

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On 14 January 1968, the seven crew members of Preview 01 were forced to bail out at approximately 0900Z. Three of the crew members were recovered on 17 January. . . . At 2305Z, 23 January 1968, Jolly Green 69 (low bird) and Jolly Green 72 (high bird) launched from Udorn RTAFB, Thailand to perform air-borne alert and strip alert from a forward operating base. Enroute, both helicopters accomplished a rendezvous and air refueling with Crown 2. The weather at the forward operating base was 4500 broken with scattered ground fog. Jolly Green 69 and 72 orbited for one hour, landed and established strip alert at 0125Z. Jolly Green 69 was refueled from drums, but before Jolly Green 72 could be refueled, the helicopters were directed to re-establish an orbit over the forward operating base with Sandys 3 and 4. Jolly Green 69 and 72 took off at 0210Z and orbited the forward operating base with Sandys 3 and 4. Sandys 1 and 2 had received a beeper signal and sighted a red smoke flare near the Preview 01 pick up area, 20°20'20"N, 104°53'52"E. The signal and smoke were located on the Northwest side of a hill in a narrow canyon running Northeast-Southwest. The hill was directly across a river from a village containing ten to fifteen huts. Because of the close proximity of the village, the Sandy On-Scene-Commander requested immediate clearance for the Jolly Greens to attempt a recovery. Weather in the area was 4000 overcast, 6-7 miles visibility with breaks in the overcast. Jolly Green 69 and 72, escorted by Sandys 3 and 4, were directed to move their orbit to a point just short of the North Vietnamese border and await clearance. Clearance to cross the border and attempt the pick up was received at 0324Z. Using UHF/DF with Sandy 1, Jolly Green 69 and 72 proceeded above the overcast to the pick up area. Sandy 1 warned that the signal and smoke could be a trap since no voice contact had been made. All crew members were briefed on the situation. Jolly Green 69 followed Sandy 2 down through a hole in the clouds while Jolly Green 72 remained above the overcast with Sandys 3 and 4. As Jolly Green 69 followed Sandy 2, power required to hover out of ground effect was computed and fuel was dumped to permit this maneuver if it should be required.

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At the time Jolly Green 69 arrived, Sandy's 1 and 2 had reached bingo fuel and a rapid recovery attempt was imperative. Sandy 1 and Jolly Green 69 switched to Guard Channel, but had to return to SAR Primary because of the interference created by the beeper signal. As Jolly Green 69 was receiving Sandy 1's instructions to pinpoint the survivor's position, two pen gun flares were sighted. Sandy 1 dropped a white phosphorous bomb between the survivor's location and the village to screen the rescue attempt. The hoist operator was alerted and an approach started. When the helicopter was flared to establish a hover, small arms fire was observed by the hoist operator and #3 gunner. All crew members heard multiple rounds hitting the helicopter. At this time the helicopter's airspeed was approximately 20 knots and absolute altitude 150 feet. An immediate go around was commenced and #1 and #3 guns returned the fire. Approximately 500 rounds were expended by the two guns. The ramp gunner believes he scored hits, but this could not be confirmed. A maximum power take off was initiated and held until Jolly Green 69 was clear of the ground fire. A climb was then made to clear the hills and overcast. A quick survey of battle damage showed hits had been received in both auxiliary tanks, and attempts to transfer fuel to the main tanks failed. All cabin interphone communications and the HF radio were inoperative. The pilot's ID-249 was shattered. The useable fuel status at this time was 1+15. Crown was advised of the situation and a rendezvous for air refueling was requested. The rendezvous was made over the forward operating base and the internal tanks were filled. When instructions were received to land at a forward operating base, Jolly Green 69 advised that such a landing would result in a large fuel spill and possible fire because of the lack of crash equipment. Also, the condition of the landing gear and utility hydraulic system were unknown. Crown relayed this information and permission was received to return to Udorn. On landing at Udorn at 1255Z, a hover was maintained until Maintenance personnel inspected and installed pins in the landing gear. Jolly Green 72 returned to the forward operating base to resume SAR alert. Jolly Green 70 was launched from Udorn to replace Jolly Green 69.

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e. WHAT WERE THE DEFICIENCIES?

HU-16:

The HU-16 was old and slow. It was limited by its low altitude capability and was not equipped electronically to effectively perform the airborne mission coordination function. The aircraft had no land recovery capability and was restricted to daylight water operations. Favorable sea conditions were also necessary for daylight water operations. The HU-16 had no armor protection for the crew or the aircraft's vital components.³⁶

HC-54:

Like the HU-16, the HC-54 was old, slow and limited in altitude capability. It had no recovery capability and required the installation of a "make-shift" system to make it minimum satisfactory to perform its mission.³⁷ Discussions of the HC-54 have been kept short primarily because of its short stay in SEA and its subsequent removal from the ARRS inventory.

HH-3:

A major modification program was required to prepare the HH-3 as a minimally effective combat ACR vehicle. The aircraft reached its maximum growth potential and was still lacking in several vital areas. Numerous airmen, downed around and to the north of Hanoi, were denied rescue effort because the distance was too great for the slow helicopters to arrive in time and the defenses too great for penetration without an Electronic Countermeasure

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(ECM) capability. Those deficiencies were reflected in the 3d ARRGp's recovery rate of all out-of-country downed airmen from March 1966 through February 1967. Of 89% which successfully survived a bailout or crash landing, and were recoverable, only 36.8% were recovered.³⁸ Though not the only recovery vehicle in SEA during this time, it was by far the newest and most sophisticated; and its limitations were a major contributing factor to the low percentage of recoveries. Another deficiency of the HH-3 was its air refueling altitude/weight limitation to below 10,000 feet density altitude. Mountainous terrain in the out-of-country primary areas of ACR operations necessitated refueling at higher altitudes.³⁹ Lack of a night recovery capability also limited the HH-3 as a combat ACR vehicle. Assistance from flare aircraft, or some other light source, was essential for those operations.

HC-130:

The major deficiency of the HC-130 was its inability to actually make a recovery. The Fulton Surface-to-Air Recovery System was installed in the aircraft; however, it was not considered feasible for use in SEA. Recoveries were not attempted utilizing that equipment, primarily because of the dense jungle and the combat environment. Any situation where the system could have been feasibly used in SEA, a helicopter was available and provided a far more practical method of recovery.⁴⁰ This was the only

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HC-130 deficiency worthy of discussion.

HH-53:

Speed and survivability are two vital factors which govern the effectiveness of a combat ACR vehicle. The HH-53 was deficient in both of these categories. The lack of a full night recovery capability was also a major deficiency which was recognized and fully spelled out in terms of what was required to correct it. The system required had to provide the following capabilities:⁴¹

Allow covert and overt penetration of the objective area under night and weather conditions.

Provide search and location of the downed crew member using both covert and overt detection equipment.

Provide automatic approach and hover to effect recovery in weather conditions.

Provide pickup of survivor and exit of the objective area under night and weather conditions.

The Air Force initiated a crash program in response to the above requirement.⁴²

2. WHAT ELSE WAS AVAILABLE?

There were several aircraft in use as airborne command posts. Any of those aircraft could have been used to serve as a command post for a rescue airborne mission commander. Some of the aircraft, such as the

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KC-135 and KC-97 provided a refueling capability but would not have been compatible with air refuelable helicopters that were destined for Rescue duty in SEA. However, prior to the introduction of air refuelable helicopters into the conflict, any high altitude long-range aircraft that could provide a suitable work area and adequate communications equipment would have sufficed.

Many helicopters were within the U. S. Armed Forces inventory during this time frame. Four models of the UH-1 series helicopters were in production and could have been provided for the ACR task. Any of the long-range vehicles capable of being retrofitted to a rescue configuration, to include armor protection and an air refueling capability, could have been selected. Helicopters were considered to be the only vehicles that provided a practical recovery capability suited to the varied SEA topography.

WHY WAS IT NOT USED?

In January 1965, the initial phase of the ARRS HC-130 conversion program was in progress. It had been determined that the HC-130 would be a suitable aircraft from which to conduct the airborne mission commander function; therefore, serious consideration was not given to the acquisition of any other aircraft. With the HC-130's already in production, no one would have listened to such an idea anyway. The HC-130 was modified to provide an air-to-air refueling capability for the helicopters; thus, the problems of a suitable airborne mission command post platform and a tanker compatible

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with air refuelable helicopters were solved. The KC-135 would not have been compatible with the helicopters in terms of refueling speeds, and the KC-97 would not have performed all functions as well as the HC-130. Since the airborne command post requirement preceded the advent of air refuelable helicopters, the HC-54's were modified to serve as an interim vehicle for the airborne command post function only.

The selection of one of the UH series helicopters was not given serious consideration for several reasons. Primarily, they did not provide a significant advantage over the vehicles use in terms of range and speed. Additionally, major modifications would have been required to produce a rescue configured helicopter. The above reasons also negated the use of the other helicopters in the military inventory. It was determined that the CH-3, when modified, would provide the best vehicle to accomplish the long-range combat ACR mission. The HH-3 would also better accomplish other ARRS missions.⁴³ The HH-53 was later selected to augment the HH-3 and to improve the long-range ACR capability.⁴⁴

3. ADDITIONAL CONSIDERATIONS: None.

4. SUMMARIZE LESSONS LEARNED.

Modified cargo helicopters do not make suitable combat ACR vehicles.

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Both helicopters provided to ARRS for the accomplishment of their combat ACR mission were modified cargo vehicles.

Although each of them offered some improvement in mission capability, neither were really suitable. They were deficient in both speed and survivability, and they did not have a full night recovery capability. They were both products of, "after-the-fact", crash programs that turned out to be only gap fillers. The need for a true combat ACR vehicle still existed at the end of this time frame.

5. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS.

That a true combat ACR vehicle be developed that is compatible with the tactical aircraft it must support.

A suitable combat ACR vehicle would certainly support the ARRS peacetime mission and would prevent hurried and costly modifications to meet wartime demands. The speed that is essential to combat recoveries is equally important to peacetime SAR missions.

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HARDWARE ANALYSIS

1965 - 31 March 1968

FOOTNOTES

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3. Briefing, General Williams to General Estes, Subj: Standard ARS Briefing, 24 July 1964., p. 23
4. Briefing, Combat Aircrew Recovery, undated, p. 4.
5. ARRS Programming Plan 580, Change 4, Appendix V Annex CHARLIE, May 1967, p. c-v-1.
6. Ibid., Change 4, p. 2.
7. Briefing, General Brooks to General McConnell, Subj: Combat Aircrew Recovery, undated, pp. 7, 11.
8. Southeast Asia Operational Analysis of Required Performance Parameters for a Combat Aircrew Recovery Aircraft, 22 May 67, pp. 1-2.
9. Briefing, Combat Aircrew Recovery, undated, op. cit., p. 5.
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12. Msg, Hq ARRS (ARXDC) 50173 May 66, Subj: HC-130H and HH-3 Aircraft for 3d ARRGp, 3 May 66, p. 1.

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(HARDWARE ANALYSIS Footnotes - continued)

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16. Briefing, Col Bridges to International Order of Characters Annual Conference, Subj: Briefing on Aerospace Rescue and Recovery Service, 2 Dec 1967, p. 3.
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21. Briefing, Hq ARRS to HQ USAF/MAC, Subj: Global SAR Study, 23 April 1968, p. 30.
22. Ibid., p. 31.
23. Ibid., p. 32.
24. Ibid.
25. Ibid., p. 33.
26. Ibid., p. 34.
27. Ibid.
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34. Ltr, Major Adrian D. Youngblood, 37 ARRS to OL-1, 3d ARRGp, Subj: Rescue Crew Commanders Report (1-3-42, 13 Mar 67) (U) 14 March 1967, pp. 1-3.
35. Ltr, Det 2, 37 ARRS, APO 96237 to Det 2, 37 ARRS (O), Subj: Mission Narrative Report (2-3-07, 15 Jan 1968) (U), 31 January 1968, pp. 1-2.
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37. Ibid., pp. 7, 11.
38. Southeast Asia Operational Analysis of Required Performance Parameters for a Combat Aircrew Recovery Aircraft, 22 May 67, op. cit., p. 3.
39. ARRS Programming Plan 580, May 1967, op. cit., p. c-v-1.
40. Briefing, 22 Aug 1967, op. cit., p. 10.
41. Briefing, 23 April 1968, op. cit., pp. 38-39.
42. Ibid.
43. Briefing, Hq ARS to Comdr MATS, Subj: Southeast Asia SAR Requirements (1965), 17 Feb 65, pp. 7, 11-12.
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PERSONNEL ANALYSIS

1965 - 31 March 1968

FOR EACH GROUP OF FUNCTIONALLY-RELATED TASKS:

1. WERE THERE ENOUGH PERSONNEL

HU-16:

Two HU-16 aircraft, aircrew and support personnel were stationed at Da Nang to support the RVN, NVN and Gulf of Tonkin operations. In addition two HU-16's with aircrew and support personnel were stationed at Korat AB, Thailand to support the Laos and western NVN operation.¹ Both units were fully manned; aircraft and personnel being furnished predominantly by the 31st Aerospace Rescue and Recovery Squadron (ARRSq) at Clark Air Base, Philippines and the 33d ARRSq at Naha AB, Okinawa. Until FY 4/65 these aircraft and TDY personnel were attached to Det 3 at Tan Son Nhut. In FY 4/65 they were assigned to Det 7 of the 38th ARRSq at Da Nang,² although they continued to receive direct control from Det 3. In the first quarter of FY 66, the unit went from a TDY to a Permanent Change of Station (PCS) status, with five aircraft and an increased number of aircrew and support personnel. At this point in time, delay in obtaining the increased personnel reduced manning to approximately 98% for aircrew and 95% for support personnel. (Ref Tab A, Page 36.)

In the third quarter of FY 66, the HU-16 portion of Det 7, 38th ARRSq

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was redesignated as the 37th ARRSq and remained at Da Nang. By this time, the experienced SEA eligible HU-16 aircrew resource within ARRS had been somewhat depleted. It was necessary to commence procuring and training additional personnel from outside ARRS. Requisitions were submitted for HU-16 personnel through normal personnel channels; however, due to the limited number of HU-16 aircrew personnel that could be identified by Hq Military Airlift Command (MAC) and Hq USAF, procurement, training and travel time to SEA delayed replacement personnel to the degree that aircrew manning during the fourth quarter of FY 66 dropped to approximately 88%. In the second quarter of FY 67, rotation of aircrew personnel, upon completion of their SEA tour, reduced the aircrew manning in the HU-16 aircraft to 70%. (Ref Tab A, Page 36.) PCS replacements could not be obtained since the HU-16 aircraft was due to phase out during the fourth quarter of FY 67. Therefore, it was again necessary to TDY HU-16 aircrew members into SEA from non-SEA Rescue units in order to maintain an acceptable level of manning. The same situation occurred in the ground support area. TDY support continued on an ever-increasing basis through the first quarter of FY 68 when the HU-16 mission was assumed by HH-3E air-refuelable helicopters and the HC-130P tanker aircraft.

HC-54:

Although no documentary evidence was available to indicate HC-54

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aircraft, aircrew and support personnel were in SEA prior to the fourth quarter of FY 65, discussion with SEA returnees indicated there was some HC-54 equipment in SEA on a short TDY basis, prior to this time.

In the fourth quarter of FY 65, three HC-54 aircraft, TDY aircrew and support personnel were assigned to Det 1 of the 37th ARRSq at Udorn AB, Thailand. The number of HC-54 aircraft was reduced to two in the second quarter of FY 66 and completely phased out by the third quarter of FY 66. The personnel manning during this period was maintained at 100%. (Ref Tab B, Page 37.) During the phase out of the HC-54 aircraft, excess personnel were reassigned to Det 2 of the 37th ARRSq at Udorn. This unit was equipped with HC-130H's and was tasked to take over the HC-54 mission.

CH-3C/HH-3E:

In the first quarter of FY 66, two CH-3C helicopters were assigned to Det 5 of the 38th ARRSq at Udorn. Rapid acquisition of these two heavylift helicopters, which were borrowed from the Tactical Air Command (TAC), resulted in only 54% PCS aircrew manning initially. TDY assistance was obtained from a TAC CH-3C unit stationed in SEA until sufficient pilots and flight engineers were in place. During the second quarter of FY 66, three HH-3C helicopters arrived and aircrew and support personnel manning increased to 92-93%. In the third quarter of FY 66, a sixth HH-3C and additional personnel arrived.³ (Ref Tab C, Page 39.) These helicopters were

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modified and redesignated the HH-3E.

By the end of the fourth quarter, FY 66, Det 5 of the 38th ARRSq at Udorn had eight HH-3E's assigned and was manned at 98% for aircrew and 97% for support personnel. (Ref Tab C, Page 39.) In FY 1/67 Det 7 of the 38th ARRSq at Da Nang received their first two HH-3E, heavylift helicopters, 168% of their aircrews, and 112% of their ground support personnel (Ref Tab D, Page 40.) The HH-3 portions of these units were redesignated in FY 3/67 as the 37th ARRSq, located at Da Nang and Det 1 of the 37th located at Udorn. Aircraft and personnel were redistributed to provide five HH-3's at Da Nang and six HH-3's at Udorn.⁴ In anticipation of the programmed increase of 14 helicopters at Da Nang and eight at Udorn, authorizations and personnel input had been arranged. Slippage in aircraft delivery caused an overage of pilots in FY 3/67. Working through MAC/USAF, arrangements were made to transfer the surplus pilots to a TAC CH-3 unit in SEA. Personnel manning averaged approximately 92% until FY 3/68 when a reduction in aircrew versus helicopter ratio from 2.0 aircrews per helicopter to 1.5 aircrew per helicopter again caused a pilot surplus. The surplus pilots were reassigned at ARRS request to the TAC CH-3 unit in SEA. (Ref Tab D, Page 40.)

In FY 1/68 Det 1 of the 37th was redesignated as Det 1 of the 40th ARRSq and moved from Udorn AB to Nakhon Phanom AB, Thailand. No

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change in authorizations or personnel strength resulted from the move.

HC-130H:

Det 1 of the 37th ARRSq was established at Udorn AB in FY 2/66. Four HC-130H aircraft and 100% of the aircrew and support personnel were deployed from ARRS resources to man and equip this new unit.⁵ However, established SEA personnel ceilings and limited ramp space at Udorn AB caused diversion of half of the equipment and personnel to Tachikawa AB, Japan until FY 1/67, when all four aircraft and all personnel were finally located at Udorn. (Ref Tab E, Page 41.) During the period FY 2/66 to FY 3/67, the maintenance support base for these aircraft was at Tachikawa AB, Japan. The maintenance personnel assigned to Det 1 of the 37th ARRSq, had to be rotated on a TDY basis to Japan to provide necessary manpower for Phase Inspections, major maintenance, etc. During early FY 3/67 all HC-130H aircraft were replaced with HC-130P aircraft to provide an air-to-air refueling capability.

Four HC-130P aircraft replaced the four HC-130H aircraft of Det 1 of the 37th ARRSq on a one-for-one basis early in FY 3/67. (Ref Tab E, Page 41.) Manpower authorizations were based on six HC-130P although the last two aircraft did not arrive until the fourth quarter of FY 67. Personnel manning was held to approximately two thirds of authorized strength to conserve SEA resources.

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During FY 4/67, Det 1 of the 37th ARRSq was redesignated as the 39th ARRSq at Udorn and Det 1 of the 39th at Da Nang was established. The 39th had six HC-130P aircraft assigned and Det 1 of the 39th ARRSq had five HC-130P aircraft assigned. Both units had 75% aircrew manning and 83% ground support personnel manning during this period. (Ref Tab E, Page 41.)

In FY 4/67, the 39th ARRSq and Det 1 of the 39th were relocated and combined at Tuy Hoa AB, Vietnam. Det 1 was deactivated leaving the 11 aircraft, aircrew and support personnel assigned to the 39th ARRSq at Tuy Hoa AB. Operating Location 1 (OL-1) of the 39th ARRSq was a small HC-130 maintenance force making up a Forward Operating Base (FOB) contingent at Udorn. Det 2 of the 39th was a large HC-130 maintenance force performing as a Maintenance Support Base (MSB) at Clark AB, Philippines.⁶ Aircrew manning fluctuated between 75% and 86% while ground support manning varied between 83% and 103% during the period FY 4/67 through FY 4/68. (Ref Tab E, Page 41.)

HH-53B:

The first two HH-53B helicopters arrived at the newly established 40th ARRSq at Udorn AB late in FY 1/68. The manpower authorizations were based on six UE HH-53B's so the 63% aircrew and 76% ground support personnel in place during this fiscal quarter was more than sufficient. During FY 2/68 the remaining four HH-53B's arrived and aircrew manning increased

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to 87%.⁷ In FY 3/68 a reduction in aircrew versus helicopter ratio from 2.0 aircrews per helicopter to 1.5 aircrews per helicopter resulted in 129% manning. This aircrew overage could not be reduced until FY 1/69 at which time rotation resolved it. This was due to the fact that the 40th Sq had the only HH-53B's in the Air Force SEA inventory. The remainder of the ground support personnel, previously trained, but delayed for numerous humanitarian or priority operational reasons, finally arrived in FY 3/68 bringing the ground support manning to 100%. (Ref Tab F, Page 43)

2. WERE THEY THE RIGHT PERSONNEL?

The required skills were identified correctly by Air Force Specialty Code (AFSC). The HH-3E and HH-53B aircrew ratio per helicopter was originally established at 2.0 aircrews per helicopter based upon an estimated combat attrition rate that later proved to be excessive. The ratio was adjusted according to experienced attrition rates in FY 3/68.

3. WERE THEY ADEQUATELY TRAINED?

In general, the training and qualification of personnel received by ARRS units in SEA was adequate. The following exception applied:

Some replacement personnel with Helicopter Flight Engineer and Helicopter Mechanic Air Force Specialties arrived without having completed prerequisite training courses and without prior experience. This necessitated On-The-Job (OJT) training being given by the units, which created a heavy

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burden for the already qualified, busy personnel. Normal up-grade training did not create a problem, but OJT of individuals not acquainted with the specific helicopters required much more time and closer than normal supervision.

Some personnel from other commands arrived without OJT records. Requests for these records were either ignored or replies were received stating that their OJT records had been lost. In such cases, individuals had to start their training from the beginning.

4. WAS THE REPLACEMENT/ROTATION PROGRAM ADEQUATE?

The rotation/replacement policy for the 1965-68 time period as it applied to units supporting the ACR mission was considered adequate. Some problems were evident throughout the period, but normally resolved on a timely basis.

5. DISCUSS ANY PERSONNEL DEFICIENCIES:

In conjunction with requisitioning of personnel, required training prior to arrival at a new unit was necessary to ensure initial assignees or replacements were properly trained for their new job. These training requirements were submitted by the gaining unit on an Air Force Form 403 through command channels. At each level of command the submission, non-submission, or accuracy of data was subject to the human error element, resulting in some personnel arriving at their new unit without completion of

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prerequisite training. If sufficient qualified personnel were assigned to the unit when the untrained individual arrived the commander had the option to return the individual to the Continental United States (CONUS) on TDY or train him on-the-job. Required training prior to reporting to an ARRS unit had been identified for each AFSC, officer and airman. Such prerequisite enroute training could have been programmed into the computerized Personnel Data System (PDS) at Air Force and major command level, for each AFSC, by command. This would have eliminated the human error element that existed and reduced the heavy workload at unit level. The initial assignment cards should have contained codes identifying all required training. Servicing Consolidated Base Personnel Offices (CBPO) could have determined by personal interview and screening of available personnel data, whether all or only part of the training would be required. This would have eliminated, to a great degree, duplication of training which occurred quite frequently. ARRS working closely with Hq MAC, assisted in preparing such a proposal to the United States Air Force Military Personnel Center (USAFMPC), for inclusion in AFM 36-11 and AFM 39-11. A forthcoming change to AFM 39-11 was to contain the suggested training identification codes; inclusion of the suggestion in AFM 36-11 and AFM 30-3, was still pending USAFMPC decision.

The normal personnel lead time for requisitioning officers was nine months and for airmen, six months. Out-of-cycle requisitions resulted in

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arrival of personnel in SEA approximately four to five months after submission of the requisitions. The rapid build up of ARRS units in SEA often resulted in establishment of units manned by TDY personnel from non-SEA ARRS units until PCS personnel could arrive. Under limited wartime conditions new units were created quickly and required to be operational very soon after they were established. Peacetime PCS assignment selection policies precluded rapid assignment fulfillment required by a limited war situation such as SEA.⁸

In April 1968, Hq MAC assumed manning responsibility for ARRS SEA units. Personnel requisitions were prepared at MAC from current unit manning documents and personnel data from the Personnel Data System. USAFMPC filled these requisitions by allocating line numbers to MAC and levying major commands to provide specified persons having the required AFSC.⁹ Many qualms existed concerning the practicality of using this before known existing discrepancies in the Personnel Data System could be corrected. The validity of the concern was proven in late 1968 when the first personnel selected under this system began to arrive. Some personnel arrived several months late and some failed to arrive at all; meanwhile, personnel in SEA units rotated to other non-SEA assignments. The SEA units had names or line numbers of replacement personnel assigned to them, but not the required personnel to accomplish the work. MAC did not requisition

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personnel because the personnel manning data showed SEA units to be 100% manned. Units began to complain about personnel shortages due to late reporting and "no shows" (personnel scheduled into a unit who never reported for duty). TDY assistance was provided where critical shortages existed from non-SEA ARRS resources and priority out-of-cycle manning actions were implemented. The reasons for the "no shows" were determined after much time and effort on the part of personnel at all levels of command (Detachment up to Hq MAC). Late reporting was due to individuals being granted a delay in reporting or being released from a SEA assignment due to a justified reason and a replacement being furnished. The "no shows" were due to individuals being released from the SEA assignment due to a justified reason, but no replacement being furnished. In both instances correction of reporting dates or withdrawal of names or line numbers from the computerized Personnel Data System was not being done. Manual verification of personnel assigned, by head count, was necessary to determine the number of personnel by grade, name and AFSC assigned to each unit. This data was collected, compiled and submitted to MAC by ARRS, so out-of-cycle manning requisitions could be submitted. All ARRS units were advised to closely monitor the personnel data products provided them by their servicing CBPO; to take prompt action through their servicing CBPO to correct all erroneous data on these PDS products; to aggressively follow-up on required corrections; and to advise ARRS if their efforts were non-productive within a reasonable

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period of time. Hq MAC would be advised if servicing CBPOs failed to provide the necessary support to the units.

Units had to be manned on a TDY basis when the following situations occurred:¹⁰

- a. Replacements reported late and PCS incumbents had completed their SEA tour and departed.
- b. Scheduled replacements were released from SEA assignments due to priority diversion or other valid reasons without selection of other individuals to take the SEA assignments. PCS incumbents would depart their SEA unit upon completion of the tour resulting in personnel shortages.
- c. Unprogrammed personnel requirements were created by sudden establishment of new units or sudden expansion of already established units.
- d. Slippage or cancellation of previously established prerequisite training for replacement or initially assigned personnel.

The above situations not only created a personnel deficit in the non-SEA units providing the required TDY assistance, but also reduced future experienced SEA personnel resources. The TDY time in SEA was deducted from the required one year tour when an individual was selected to perform his first involuntary SEA assignment.

The quick change in unit designations during 1965 and 1968 resulted in quite a few personnel already enroute trying to report to a non-existent

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unit in SEA. It was several months before corrected orders could catch up to individuals concerned; and by that time, the only purpose served was personnel accounting. TDY personnel had to be replaced by other TDY people until the PCS replacements were finally located or they located the proper unit. Redesignation of units should require a minimum lead time of four months to prevent repetition of the confusion which occurred. Authority to realign airmen personnel was granted Commander, 3d ARRGp, to provide necessary flexibility.

The rapid buildup of ARRS units in SEA soon depleted ARRS CONUS and non-SEA oversea experienced HU-16 and HC-130 resources. This constant loss resulted in SEA replacements having less experience than their predecessors. Personnel possessing three-level AFSC's were replacing those possessing five-level AFSC's and shortages occurred for temporary periods in the supervisory, seven, eight, and nine-level AFSC's. Considerable time was necessarily devoted to OJT in all ARRS non-SEA units.

Aircraft would be allocated in the USAF and MAC Programming Documents which established new units or enlarged existing ARRS units in SEA. MAC Manpower Documents, Unit Manning Documents (UMD) and Unit Detailed Listings (UDL) would automatically identify the manpower authorizations; and the appropriate personnel activity would then initiate personnel procurement, en route training, and reporting actions. Aircraft

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unit in SEA. It was several months before corrected orders could catch up to individuals concerned; and by that time, the only purpose served was personnel accounting. TDY personnel had to be replaced by other TDY people until the PCS replacements were finally located or they located the proper unit. Redesignation of units should require a minimum lead time of four months to prevent repetition of the confusion which occurred. Authority to realign airmen personnel was granted Commander, 3d ARRGp, to provide necessary flexibility.

The rapid buildup of ARRS units in SEA soon depleted ARRS CONUS and non-SEA oversea experienced HU-16 and HC-130 resources. This constant loss resulted in SEA replacements having less experience than their predecessors. Personnel possessing three-level AFSC's were replacing those possessing five-level AFSC's and shortages occurred for temporary periods in the supervisory, seven, eight, and nine-level AFSC's. Considerable time was necessarily devoted to OJT in all ARRS non-SEA units.

Aircraft would be allocated in the USAF and MAC Programming Documents which established new units or enlarged existing ARRS units in SEA. MAC Manpower Documents, Unit Manning Documents (UMD) and Unit Detailed Listings (UDL) would automatically identify the manpower authorizations; and the appropriate personnel activity would then initiate personnel procurement, en route training, and reporting actions. Aircraft

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production and delivery dates frequently slipped, accelerated, or location of units changed. Sometimes these changes were reflected in the USAF and MAC documents and sometimes no documentary changes occurred. In either event, constant change to instructions given to individuals resulted in much paperwork, confusion, and arrival of some personnel at end destination too early or too late. After a short period of experience under such a situation, personnel instructions were no longer changed unless slippage was for a prolonged period, or SEA unit of assignment was changed or relocated. When personnel had already departed their CONUS unit, the 3d ARRGp was requested to reassign them to the proper unit.

6. WHAT WERE THE MAJOR FACTORS AFFECTING MORALE?

Air Force policy until late 1967 was to provide SEA returnees an assignment to their base of choice insofar as possible. Every effort was made to fulfill the policy at all levels of command. Initially no problems were encountered. As more personnel became eligible, due to expansion of USAF participation and continuance of the conflict beyond the anticipated end of hostilities, personnel requirements at preferred bases/general geographic areas were exceeded to such a degree that the base of choice policy had to be withdrawn. In March 1967 only 19% of the Rescue personnel in SEA were receiving their base of choice upon completion of their tour.¹¹

ARRS and MAC airmen and non-commissioned officers in SEA units

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were receiving notification of their CONUS assignments upon completion of their tour as much as 30 days later than their PACAF contemporaries on the same base.¹² The primary cause was determined to be due to the units in SEA being geographically separated from the servicing CBPO, originally at Orlando AFB, Fla. and subsequently changed to Hickam AFB, Hawaii in May 1967.

There were a great many complaints from ARRS and MAC personnel in SEA in 1967 concerning the servicing of their records by the CBPO.¹³ The main concern was accurate and timely inclusion of items in their personnel record data that affected promotion and reassignment. Since the CBPO was geographically separated from the SEA units, personnel could not personally check their records to ascertain that these items important to their Air Force career and personal livelihood were accurate and up-to-date. Due to the numerous complaints, arrangements were made for the 61st Military Airlift Wing (MAWg) CBPO to accomplish individual personnel records review although an Air Force waiver to this requirement was in effect. Further records dispersal to CBPO's collocated with ARRS SEA units was scheduled to take place from October 1968 through January 1969.¹⁴

A common complaint among SEA personnel was that all SEA returnees, except Air Force members, arrived at the CONUS Port of

Aerial Embarkation (PAE) bedecked with their newly won decorations. Air Force personnel, who almost exclusively arrived at CONUS PAE's in the 1505 uniform, did not enjoy the same prestige when greeted by families and friends.¹⁵ Recommendation was made to USAF to allow optional wearing of ribbons on the 1505 uniform. The inequity was corrected.

7. WHAT WERE SIGNIFICANT PERSONNEL ACCOMPLISHMENTS?

- a. Newly established units were manned in time to meet scheduled operational dates although TDY was occasionally required until PCS personnel could arrive.
- b. Morale problems were resolved as they became known.
- c. Personnel planning, detailed flow charts, and careful scheduling of correctly identified skills, numbers of personnel, and training required for new or expanded units was accomplished.
- d. Special selection criteria for unit commanders in SEA was established.
- e. Despite the deficiencies, limitations, and inflexibility of the Personnel Data System, ARRS managed to keep Rescue SEA units operational by TDY and manual manning checks as a basis for out-of-cycle requisitioning.

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f. Six thousand one hundred and fifty-five (6,155) decorations, ranging from the Medal of Honor to the Air Force Commendation Medal had been awarded to ARRS personnel in SEA as of 30 September 1968.

g. The rapid buildup of ARRS units in SEA created a tremendous training requirement. This training requirement had quite an impact on Aerospace Rescue and Recovery Service as well as Air Training Command. New rescue techniques, tactics, procedures, and equipment were devised to meet SEA requirements based on in-country experience. In order to provide properly trained aircrews to ARRS SEA operational units, a Specialized Aircrew Training School (SATS) was established as the primary mission of the 48th ARRSq(T), Eglin AFB, Florida. This unit was changed overnight from an operational squadron to a school squadron, responsible for teaching the latest rescue tactics, techniques and procedures in HC-130H/P and HH-3E aircraft. The HH-53B helicopter would be included in the curriculum as soon as the initial Air Force procured 53's became available from the factory. Procurement of adequate numbers of each type aircraft, manpower authorizations, and qualified instructor and maintenance personnel required almost two years to reach an acceptable level. Meanwhile, the best qualified aircrew personnel within ARRS conducted training in aircraft temporarily diverted to support training until UE aircraft arrived.

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h. ARRS was advised in late June 1966 that eight HH-53B's were being procured for the Air Force for use in SEA rescue operations. The operational ready date for ARRS deployment was FY 4/67. These helicopters were the first HH-53's in the Air Force inventory. The first two production helicopters were scheduled for delivery in April 1967 but were actually delivered in May 1967. With no schools, no experience, and no trained personnel to operate or maintain these aircraft, it was necessary to work from the stated operational date and closely schedule required training for all personnel. Specialized factory training was arranged for all aircrew and maintenance personnel. Two aircrews received flight training at the factory. These aircrews trained the ten additional aircrews at Eglin AFB, Fla. with two HH-53A's that were temporarily assigned to the 48th ARRSq (T) in January 1967. Delays in obtaining parts drastically reduced available flying time for training, but all aircrews were trained by late November 1967. Personnel procurement, scheduling of en route training and port departure dates required the highest priority and cooperation of all concerned to meet the operationally ready date established by the Office of the Secretary of Defense.

8. ADDITIONAL CONSIDERATIONS: None.

9. SUMMARIZE LESSONS LEARNED.

a. The existing practices, procedures, and policies of the Personnel

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Data System did not provide reliable initial or replacement personnel assignment and en route training results. Until the Personnel Data System proved effective in complete support of field units, qualified personnel technicians and specialists would be required in each operating unit to assure proper corrective personnel actions were initiated, followed up, and completed. This capability was required to purify personnel data, particularly in the airman manning area.

b. The existing Personnel Data System was inflexible in that it took too long to complete personnel manning actions required by sudden change in authorized strength of a unit or quick establishment of a new unit. Another aspect of the inflexibility was the long time it took to eliminate identified errors from the memory banks of Command Computers at all levels, resulting in false manning figures and other erroneous data.

c. Although prerequisite training requirements for ARRS aircrews and maintenance personnel were identified in MAC and Air Force directives, personnel still arrived too frequently in SEA, unqualified and untrained. Changes affecting previously issued personnel instructions concerning en route training, port departure dates, and end unit of assignment created an unnecessary administrative workload.

d. The six month airman personnel requisitioning cycle did not

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provide sufficient lead time for ARRS aircrew members being assigned to SEA. An eight month requisitioning cycle was required due to travel time, leave, and required en route training. Frequent assignment reclama by selected individuals created further delays in personnel reporting to their SEA units. ARRS could not provide prolonged TDY support of temporarily established (non-PCS) units without degradation of mission capability in units providing the TDY personnel. Inevitably a serious morale problem generated due to sudden and prolonged separation from family and friends.

10. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS.

The conceptual and doctrinal recommendations listed below, subparagraphs a through d, generally support, in the same alphabetical order, the lessons learned that have been listed above:

- a. The Personnel Data System must provide accurate personnel data more quickly to all levels of management. The inaccuracy of data available to middle and top management levels requires a dual manual and mechanized capability to allow correction of erroneous data. Improved procedures, policies, and systems need to be developed in order to provide sufficient accurate personnel data for sound management decisions. When the Personnel Data System becomes more accurate and effective, the personnel technicians and specialists in each unit should be reduced and ultimately

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eliminated. The concept of eliminating personnel authorizations from units upon collocation of personnel records in a CBPO on the same base as the unit should be changed until the PDS attains the required degree of reliability. The concept was based on the CBPO assuming all personnel functions of the unit. CBPO's have not been successful in correcting or identifying erroneous personnel data so higher management has had to levy this responsibility on the unit commander, while at the same time deleting the unit capability to help itself.

b. The Personnel Data System requires revision to permit a much more rapid PCS manning action response. This capability is required when a new unit is quickly established or when a sudden increased authorization occurs in an established unit. This situation occurred several times in SEA as well as in other areas. Out-of-cycle requisitions submitted outside of the PDS were used to supplement the established system, but TDY personnel from command resources were required during the interim period. A minimum of 90 days and a maximum of one hundred twenty (120) days from submission of requisition to reporting of personnel at their designated unit is desirable.

c. To ensure selection of qualified personnel in such a short time period an improved system of identifying special skills or qualifications would be mandatory. Special Experience Identifiers (SEI) Codes have been

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established in AFM 300-4. Early identification and input into the PDS of SEI's Air Force wide would provide the necessary data to ensure selection of properly qualified personnel. Receipt of and timely notification of en route training required by personnel selected for assignment to oversea units has always been a problem. The initial assignment cards should contain all prerequisite training for that specific AFSC in the gaining command. A copy of the assignment card would go to Air Training Command who would automatically establish quotas in the required courses. The servicing CBPO upon receipt of the assignment card would review the assignee's records and if all or some courses had already been completed promptly cancel those courses. Training prerequisites would be provided by each command for inclusion in AFM's 36-11 and 39-11. Necessary training codes are currently identified in AFM 300-4. This would eliminate the present cumbersome system which requires individual units to manually submit training requirements on AF Forms 403 which are consolidated at several levels of command before reaching Air Force.

d. The present six month airman personnel requisition cycle should be made flexible enough on a permissive basis to allow submission of requisitions seven or eight months prior to the reporting month at the gaining unit. This should apply only where the en route training requirement is of sufficient length to warrant such action.

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PERSONNEL ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. Ltr, Hq ARS (ARXDC) to MATS (MAODC), Subj: Combat Recovery Operations in Southeast Asia, 4 Nov 1965, w/Attachment 3 of 14 Attachments to Proposed Ltr to USAF.
2. Msg, 3d ARRGp (RGCO) 50017 Feb 66 to Hq PARRC, Subj: TDY Requirements of 37 ARRSq, 12 Feb 66, p. 1.
3. Helicopter Allocations - Pacific, 6 January 1966, Extract.
4. Helicopter Allocations - Pacific, 17 March 1967, Extract.
5. ARRS Programming Plan 574, 15 Dec 1965, p. 3.
6. Msg, Hq MAC (MAXDC) 51530 May 67, 24 May 67.
Msg, Hq MAC (MAXMOO) 51748 Jun 67, 9 Jun 67.
7. 3d ARRGp History, 1 Jan - 30 Jun 68.
8. Air Force Manual 30-3/36-11/39-11.
9. Msg, MAC (MAPMAAF) 24200 Apr 68, Subj: Oversea Requisitions and En route Training.
10. Ltr, Hq MAC (MACCS), Subj: Action Items Commanders Pacific Trip, 7-27 March 1967, 20 April 1967, w/1 Atch, Atch 1, p. 6, 11.
11. Ibid., p. 3.
12. Ibid.
13. Ibid.
14. Ltr, Hq MAC (MAPDSP/MSgt Hamm/5615) to 61 MAWg (61P), Subj: Records Dispersal Schedule Actions, 5 Sept 1968, p. 1.
15. Ltr, Hq MAC (MACCS), 20 April 1967, op. cit., p. 1.

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SUPPORT ANALYSIS

1965 - 31 March 1968

1. HOW DID SUPPORT ACTIVITIES OR FUNCTIONS SIGNIFICANTLY
INHIBIT OR ENHANCE THE ACHIEVEMENT OF THE TASKS?

a. FACILITIES.

Facilities for personnel, aircraft parking and maintenance functions were generally inadequate. In some instances, certain facilities were completely non-existent. The bases in SEA were by no means endowed with the space or facilities required to support the influx of new and larger rescue aircraft and their attendant personnel. Yet, entire ARRS units were squeezed in, and steps were taken to minimize deficiencies as quickly as possible.

The HU-16 TDY contingent received heavy maintenance support from their parent organizations following each TDY rotation. Upon activation of the PCS HU-16 squadron at Da Nang, the lack of space and maintenance support facilities were overcome by continued rotation of the aircraft to Okinawa for scheduled maintenance. That procedure also enabled the HU-16 crews to practice water takeoffs and landings periodically. Suitable water training facilities were available in Okinawa, but not in Vietnam.¹ Following the deactivation of the PCS squadron, the TDY operation was resumed by the ARRSq at Okinawa, and the above rotational maintenance practice was

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continued. Living conditions at Da Nang were improved in May 1966, when two airconditioned trailers were made available for a portion of the rescue forces. Trailer space was not available for all crewmembers, but pre-departure crew rest could be taken in the airconditioned quarters. That was a major step in combating crew fatigue on long missions during hot weather.²

As the HH-3 force gradually moved into Da Nang, the HU-16 force gradually moved out. That allowed an orderly turnover of available facilities to the helicopter unit. By August 1967, a hangar had been made available for ARRS use, and the Commander 3d ARRGp considered that the unit at Da Nang had sufficient facilities, maintenance wise, to operate. That was in spite of the fact that the orderly room and operations section were approximately one mile from the hangar and the maintenance section.³

Very little information was available on the HC-54 facilities during their short stay at Udorn. The only comments came from one of the pilots who stated, "The original Udorn BOQ's were inadequate - hot, damp, and crowded with many insects". That same pilot reported that the parking ramp was an unprepared surface and unsatisfactory - too much mud and dust.⁴

The conditions above concerning Udorn had not improved appreciably when the HC-130's and the HH-3's arrived. Upon arrival of the HC-130's in

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FY 2/66, the flight line and parking ramp areas were constructed of crushed rock and Pierced Steel Planking (PSP). The crushed rock negated any possibility of a successful Foreign Object Damage (FOD) program. Additionally, the entire ramp area was under water after even a relatively mild rain. The location of the ramp with respect to the maintenance control facility also complicated the maintenance function. The physical separation of approximately 400 yards, coupled with the lack of vehicles and communications capability, made maintenance control extremely difficult.⁵

Maintenance efforts were further hampered, during the frequent rainfalls, by the lack of a hangar or nose dock facility. The lack of an aircraft towing tractor within the squadron also required aircrews to back the aircraft into their parking spaces.⁶

Living facilities provided for the maintenance personnel certainly tended to degrade the overall maintenance effort. Those personnel were housed in open bay barracks adjacent to the runway, and the combination of heat and jet noise was not conducive to restful sleep.⁷

The rapid influx of HH-3 helicopters into Udorn compounded existing inadequacies in facilities. Their assigned parking area was already over congested, and provided minimum rotor tip clearance. That congestion was not confined to the parking ramp, as evidenced by the frequent requirement for wing walkers along taxi routes.⁸

The physical separation of the squadron command, operations, maintenance, and administrative sections hampered the operations and maintenance planning and coordination functions. Definite plans for the correction of this condition had not been formulated as late as June 1967.⁹

Continuous improvements were made in available facilities. However, the assignment of HH-53 helicopters to Udorn, in September 1967, again created a space problem. The teardown and buildup of the HH-53B T-64 engines could not be performed on base due to the limited space and facilities. An alternate plan to perform that maintenance at Nakhon Phanom AB was rejected because of inadequate facilities there. As a result, the engines had to be flown to North Island Naval Air Station, San Diego, California for teardown and buildup. That problem was solved in May 1968 when a Jet Engine Field Maintenance facility was completed at Udorn.¹⁰

The forward operating site at Quang Tri, utilized by the helicopter forces, also suffered from over congestion. The possibility of delayed scramble takeoffs was a continuing problem due to congestion. That same site also lacked suitable crew rest facilities. As late as June 1967, the aircrews were using the clubs, dayrooms, and often the aircraft as crew rest facilities. Some time later, a quonset hut was erected for use by the alert crews.¹¹

The first contingent of HC-130 maintenance personnel moved to Tuy Hoa AB in April 1967. Although plans were in-being for the establishment of facilities to support the 39th ARRSq relocation, that first contingent found the base totally unprepared to accept and support the unit. Maintenance personnel were required to live in tents more than a mile from the flight line, vehicles had not been assigned and maintenance facilities of any kind were not available. Additionally, it was some time before parked aircraft could be static grounded.¹²

During the month of June 1967, maintenance personnel expended over 500 man hours on self-help projects. They cleaned and constructed work spaces in and near the hangar that had been designated for squadron use, and by the end of the month all maintenance and supply functions had been established in that area. Facilities remained incomplete for command, operations, and administrative functions.¹³

Nine vehicles were authorized for squadron use, but only six were assigned. That deficiency, plus frequent down time on assigned vehicles for lack of parts, compounded the problem created by the physical separation of maintenance facilities from the remainder of the squadron.

The squadron's move to Tuy Hoa was completed in July 1967, but the problem of establishing a harmonious operation had just begun. Mainten-

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ance had its hands full with major and minor aircraft problems; the operations building was still under construction with a completion date set for late July; and the aircraft were parked on an open ramp, extremely vulnerable to enemy mortar fire. There were solutions to all of the above problems, but time was required to effect those solutions.¹⁴ Obvious efforts toward solutions were reported by the Commander 3d ARRGp in August 1967. He reported that the MAC Commander seemed quite pleased with the physical facilities at Tuy Hoa on a recent visit. He further reported that the facilities at Tuy Hoa had improved daily for the past several months.¹⁵

Delayed USAF/PACAF approval for the relocation of the 39 ARRSq at Tuy Hoa resulted in certain undesirable actions, e.g. the 39th hangar was under construction and a large corrosion control facility had been programmed next to the hangar. However, work could not begin on the corrosion control project without USAF approval. Consequently, the drains, hydrants, etc., which should have gone in the corrosion control area could not be installed. The hangar floor and towing ramp into the hangar had to be constructed without any provisions for corrosion control facilities. Future approval for construction of that facility would require a partial breakup of the towing ramp, to install necessary plumbing, or some other action which could result in a second rate facility.¹⁶

b. LOGISTICS:

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HU-16:

HU-16 mission capability was successful, from the supply standpoint, primarily due to the reliability of the War Readiness Material (WRM) Transportable Kits. Those kits, deployed from the aircraft's home stations, were the prime support for the HU-16's. Long established supply lines and base stock levels also enabled good supply support from the rescue squadrons at Okinawa and the Philippines. However, increased work loads were imposed on those squadrons. The squadron work load in Okinawa increased to the point that TDY maintenance augmentation personnel from Continental United States (CONUS) units were required. HU-16 logistical support in SEA was generally adequate; however, there had been no logistical planning action to provide immediate supply support in the event of intensified wartime activity.¹⁷

HC-54:

The HC-54's in SEA were supported primarily from WRM kits deployed from the aircraft's home stations. PACAF policy at the time was that TDY units had to be supported from the home base. That requirement posed additional workloads for the 36th ARRSq in Japan and the 79th ARRSq in Guam to maintain those kits. Mission support capability for the HC-54's in SEA was successful, from the supply standpoint, primarily due to the reliability of the ARRS WRM Transportable Kits.¹⁸

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HC-130:

In preparation for the arrival of the HC-130's at Udorn, a check was made in June 1966 to determine the maintenance equipment on hand and the number of aircraft spare parts in base supply. Several thousand of the approximate 9000 items listed on the HC-130 Air Force Supply Directive (AFSD) had arrived at Udorn, but remained in their shipping containers just as they were received from Warner Robins Air Materiel Area (WRAMA). The Combat Support Group Director of Maintenance (DM) and the Base Supply Officer (BASO) revealed a huge backlog of unprocessed work due to the conversion to Punch Card Accounting Machines and only 70% manning in Base Supply. The 3d ARRGp sent five personnel TDY to assist the Udorn host base supply in an effort to process the spare parts into base stocks.¹⁹ Of the approximate 9000 line items listed in the HC-130 AFSD, 6,332 had been received and they were processed in 22 days by five 3d ARRGp personnel. Udorn Base Supply offered one man to assist on a part time basis. The rationalization for doing Udorn Base Supply's work was that the above efforts would constitute the initial HC-130 supply support in SEA.²⁰

Following the deployment to Udorn, initial maintenance efforts were seriously hampered by the shortage of Aerospace Ground Equipment²¹ (AGE).

ARRS Programming Plan 575 called for four PCS HC-130H's into

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Udorn by 1 July 1966, and provided for two follow-on aircraft as soon as trained crews and aircraft were available. The biggest problem that confronted the move into Udorn was the lack of field maintenance support, and the lack of a concrete parking ramp. It was decided at a 13th AF conference that the move should go as scheduled since the aircraft were new, and little field maintenance support would be required on the initial aircraft prior to their replacement by updated HC-130P's from the factory. Also the new HC-130P's would require little in the way of field maintenance for the first few months. The 13th AF representative stated that by December 1966 or January 1967, enough field maintenance facilities and support were expected to be available to support four HC-130's, but that it was very doubtful if eleven HC-130's could ever be placed at Udorn because of other units programmed for that base.²²

Field maintenance was not available at Udorn for the programmed HC-130; therefore, the aircraft had to depart the theater for scheduled heavy maintenance. The 36th ARRSq at Tachikawa, Japan was considered as one of the better available facilities; however, maintenance personnel from Udorn had to accompany the aircraft to augment the 36th ARRSq Maintenance Section.²³

The lack of a suitable beddown base for the 11 programmed HC-130's caused considerable difficulty and had a decided impact on planning

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actions. Since December 1965 when ARRS first programmed 11 HC-130's into SEA, 18 separate proposals, counter-proposals or decisions had been made affecting the beddown of those aircraft.²⁴

On 15 January 1967, the 13th AF advised the 3d ARRGp that the 11 HC-130's would be bedded down at Tuy Hoa. This beddown decision fell into the category of a forward operating base since no HC-130 phase inspections or heavy maintenance facilities were planned for Tuy Hoa or any other base in SEA.²⁵

If all maintenance except organizational or unscheduled maintenance had to be accomplished in Japan, supported by TDY personnel from SEA, the buildup to 11 aircraft would have become quite complex in view of the magnitude of the TDY problem and the wasted flying time. Flying hours expended to ferry aircraft to and from Japan would have continued to exceed 20% of the programmed flying hours.²⁶

Clark AB in the Philippines was determined to be the most suitable location for the accomplishment of HC-130 heavy maintenance, particularly since the 31st ARRSq was established there, and their facilities could be used. Thus, Detachment 2, 39th ARRSq was formed at Clark AB and manning was increased to facilitate the SEA HC-130 maintenance support function in conjunction with the 31st ARRSq. The first HC-130 phase inspect-

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ion was scheduled to be performed at Clark AB on 1 August '967, but a shortage of some critical AGE items, Liquid Oxygen (LOX) carts, power units, C & E test equipment, and maintenance stands required a three week delay. An immediate redistribution of assets was made and Detachment 2, 39th ARRSq was operational on 22 August 1967.²⁷

The foregoing indicated that although logistic support for the HC-130 was adequate, it was only through the diligent efforts of ARRS personnel.

HH-3:

The first CH-3C's deployed to SEA were the two loaned to 3d ARRGp by TAC in July 1965.²⁸ Prior to that time, ARRS had received approval for their initial buy of H-3's and for modification of the aircraft to a rescue configuration, which was designated the HH-3E.

By September 1965, CH-3 production had been accelerated on two occasions to meet SEA requirements. Production of spare parts had not been accelerated, although the extensive modification and configuration design changes underway had already started to create support problems. The mounting problem was compounded when plans were announced in September 1965 by Hq USAF to deploy CH-3C's to PACAF for utilization in SEA. That deployment actually began three months later.²⁹

One deployment consisted of fourteen CH-3C's; six new production aircraft, and eight used aircraft from AF resources. Upon arrival in SEA, those aircraft were placed under the immediate control of the 7th AF and not assigned to the rescue force. Those fourteen aircraft were scheduled for deployment to one SEA location, but that was changed to four operating locations at the time of deployment. That required the original support equipment to be divided four ways and forced those units to operate with the barest minimum of spares and AGE.³⁰

The dispersal problem was further compounded by another deployment of six HH-3's to an additional SEA location. Those aircraft were assigned to MAC, under the immediate control of the 3d ARRGp and located at Udorn, Thailand.³¹ That required one additional set of initial spares and an additional set of AGE for helicopter support at Udorn.

The CH-3C was forced to go through many modifications to meet the requirements imposed by special projects and changed missions, e. g. The following changes, as outlined in the revised Detail Specification For USAF Long Range Helicopter, dated 15 June 1964 were to be effective with the FY 66 aircraft production deliveries:³²

Engines (2): T58-GE-5 to replace the T58-GE-1.

Modified (11' diameter) tail rotor subject to ASD recommendation after study.

Cargo sling. The minimum capacity will be 6,000 pounds and will provide a load equalizing mechanism including a draw bar indicating system which will show the pilot the pull force in pounds during two operations.

Flood lights, externally mounted above the water line, controllable from cockpit.

Fuel system will include self-sealing main fuel tanks, externally mounted auxiliary fuel tanks which are releasable inflight by the pilot, and the provisions for internal auxiliary fuel tanks now provided will be maintained. A fuel jettison system will be provided.

Armor will be installed for the protection of crew and vital aircraft components. Armor will be removable when not required.

Shatterproof windshield and cockpit transparencies will be provided. The windshield will be provided with anti-icing, windshield washer and wiper provisions.

A cruise guide blade stall indicating system will be provided.

Avionics package will be changed to include installation of the following additional items:

- (1) AN/ARC-54 FM Radio
- (2) HF-103 SSB Radio
- (3) VHF-101 AM Radio
- (4) AN/APN 130 Doppler Navigation System
- (5) AN/APX 64 Transponder
- (6) LORAN C
- (7) VHF FM Radio Homing Adapter
- (8) AM 3969 Pre-amplifier for UHF Homing Adapter

Engine inlet ice deflection shield.

Provisions for the installation of the following:

(1) Hard point provisions for non-amphibious landing gear installation after removal of sponson.

(2) Hard point plumbing provisions for probe inflight refueling system.

(3) Externally mounted loud hailer.

(4) Externally mounted variable speed rescue hoist.

(5) Inert victim/survivor rescue platform for use in recovery from surface of water.

(6) Infra-red radiation suppression system.

In addition to the above changes, PROJECT LONG ROPE requirements specified that the aircraft supplied to ARRS would be designated the HH-3E and have the following additional equipment:³³

Complete air refueling system.

Loud hailer.

External variable speed rescue hoist with "forest penetrator" seat attached to 250 foot length of cable stressed for loads of 600 pounds.

Rescue platform.

Other special projects required such modifications as defensive armament installations, camouflage paint, structural modifications to the loading ramp, and sand-separator engine inlets.³⁴

The many changes required to convert the CH-3C to the HH-3E demanded that a spare parts provisioning conference be held in January 1966.

That conference was held in order to provide support for the modified items; however, unprogrammed parts requirements under a combat environment posed such a problem that the entire H-3 helicopter had to be reprovisioned only 10 months later, in October 1966.³⁵

Reliability and maintainability were part of the HH-3 contract, but without incentive clauses. Maintainability was not a problem since it was well within contractual limits. However, reliability problems that resulted from premature major component failures, were major contributing factors toward high Not Operationally Ready Supply (NORS) rates.³⁶ Those high NORS rates began to present major problems for ARRS in FY 1/66 and continued throughout the time frame. (Ref Tab C, page 39, Tab D, page 40)

Some of the major HH-3 support problems that confronted the 3d ARRGp were discussed below as typical examples of logistic support received.

Windshield problems were encountered on the HH-3's which required replacement. Unlike the glass installed on the CH-3's, the "stretch" glass of the HH-3E's was relatively soft and less resistant to abrasion from the type of dust and dirt encountered at operating locations. Flight through rain, followed by immediate flight through blowing dust, left the windshield coated with mud. Forward flight visibility was reduced to nil, and the windshield wipers had to be used. Abrasive particles were

ground into the windshield, requiring replacement. Anticipated NORS requisitions were submitted well in advance, but 24 days later the first helicopter was Not Operationally Ready Supply Grounded (NORS-G) for a windshield. In an effort to prevent reoccurrence, the ARRS Liaison Officer at WRAMA was informed to expect consumption of approximately one set of windshields per aircraft per four months.³⁷

By mid-July 1967, the 37th ARRSq at Da Nang was flying the Gulf of Tonkin orbit on a daily basis. Additionally, two HH-3's provided daily strip alert at Quang Tri and one HH-3 provided strip alert at Da Nang. That was accomplished with eight assigned HH-3's. Two of the assigned helicopters were continuously NORS-G for Bendix flexible diaphragm couplings and nose gear repack kits. Maintenance was able to support the fraged missions and all alert requirements; however, on numerous occasions, all available Operationally Ready (O/R) aircraft were airborne prosecuting rescue missions.³⁸

The June 1967 HH-3 Not Operationally Ready Maintenance (NORM) and NORS-G rates of 19.6% and 10.4% respectively, were attributed to the fact that the 3d ARRGp had assembled four new helicopters that month, and had to send their HH-3E flexible diaphragm couplings to Nha Trang to be x-rayed. The Maintenance and Supply Staff had also been burdened with problems that had originated in the CONUS. Examples were: the

unserviceable condition of five aerial refueling hoses and missing 780 equipment, armor plating, and HH-3 flex coupling bolts.³⁹

During the flight test of the first modified HH-3E, the main transmission chip detector light illuminated; and after a normal landing, it was discovered that the main gear box oil samples were saturated with metal. The 3d ARRGp had been informed by WRAMA that the normal oil samples taken from another of the HH-3's had shown excessive metal particles, which required a main transmission replacement after only 94 hours of operations. That caused the 3d ARRGp concern over the quality control during main transmission manufacture. Not only did that problem increase maintenance and lower operational effectiveness, but more important, could very well have caused the loss of a combat crew and helicopter over enemy territory or in the Gulf of Tonkin. The above weakness was summarized in a letter to the 7 AF DM which highlighted the need for major emphasis on quality control by the contractor.⁴⁰

As indicated above, inadequate logistic support adversely effected achievement of the assigned tasks.

HH-53:

The first two HH-53's arrived in SEA aboard a US Navy aircraft carrier in mid-September 1967. Four days were spent reassembling the

helicopters, checking the systems, flying the aircraft to a land base and then completing preparations for the ferry flight to Udorn. Invaluable support was rendered the ARRS personnel by the US Marines, the US Army, and the Royal Australian Air Force in their efforts to prepare the aircraft for departure.⁴¹

After reaching Udorn, one of the helicopters was NORS-G for an intermediate gear box and the entire supply system fell far short of meeting the early demand for spare parts. Thus, for the remainder of the month, the HH-53 NORS-G rate was 37% and the O/R rate was only 43%.⁴² Two early problems that plagued maintenance personnel was chronic leaking of the hydraulic seal in the sleeve and spindle of the main rotor head, and the realization that a failure of any component in the starter system would preclude engine start.⁴³

The second two HH-53's arrived in Vietnam in mid-October 1967 and both aircraft had one vertical hinge seal leaking excessively. Four days were spent awaiting the delivery of the seals and special tools, only to find during the first flight that one of the aircraft had a severe vibration at air-speeds above 140 kts. A check with an electronic blade tracker revealed that three blades were out of track and another day's delay was encountered. The aircraft reached Udorn 10 days after their arrival in Vietnam.⁴⁴

Twenty four Emergency Unsatisfactory Reports and three Quality Control Deficiency Reports were submitted on the HH-53's between 1 October and 31 December 1967. Other problems that hampered the maintenance function were the difficulty in receiving updated publications and the lengthy delays in receiving Time Compliance Technical Orders (TCTO) from WRAMA. One action that might have alleviated some of the original problems would have been a liaison with the U.S. Marine units that were operating the HH-53A's. They had encountered several of the problems that plagued the ARRS forces.⁴⁵

It must be concluded from the above, that logistics support for the HH-53 was inadequate.

For a comparison of the 3d ARRGp's O/R, NORM, and NORS rates to the standards established by 7th AF, which were 80% OR, 15% NORM and 5% NORS, see Tabs A through F, Pages 36 through 43.⁴⁶

c. WEATHER.

The weather services rendered for those areas where weather gathering facilities were available did not inhibit the achievement of the tasks. For those areas where data gathering facilities were not available, ARRS crews had to rely on forecast weather and weather as reported by either strike or support aircraft. Naturally, area forecasts did not always

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provide an accurate picture of existing weather in small specific areas upon the arrival of recovery aircraft, but no one really expected such. Due to a lack of complaints concerning the weather service rendered, it must be considered to have been generally adequate.

d. INTELLIGENCE.

Achievement of the combat aircrew recovery task was continuously and seriously inhibited by a near total lack of specialized SAR intelligence. The ACR aircrew needed to have up-to-the-minute detailed information on conditions prevailing or likely to prevail in mission areas and along mission routes. Chance of mission success was significantly reduced without it. Also, commitment of SAR forces might have been withheld unnecessarily on the basis of inaccurate, improperly interpreted or outdated information.

This problem was presented in some detail in an ARRS letter to MAC.⁴⁷

An effective intelligence system is absolutely essential if ARRS forces are to survive in a hostile environment and to adequately support operational forces for all contingency plans. The intelligence data must include, in addition to Assault and Drop Zone data, comprehensive and complete data on hostile ground forces for the entire area of operations. All losses of ARRS forces in Southeast Asia to date have been the result of hostile small arms and ground based machine gun and mortar attacks.

ARRS is generally required to respond more rapidly than the operational forces it is committed to support. LBR units, for example, should be in place prior to the

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arrival of the tactical forces. ARRS conventional aircraft must be available for the deployment of the tactical forces and the first operational mission(s). With the equipage of ARRS with air-to-air refuelable helicopters, the extent of the area that ARRS forces can effectively recover downed aircrews is limited only by the endurance of the helicopter crews. These ARRS forces (HC-130P, HH-3E and HH-53 aircraft) have been supported in the intelligence function to a degree by the tactical intelligence units at their home stations. However, these intelligence units are primarily oriented to immediate tactical mission routing, targeting, and E & E information. The tactical intelligence unit, therefore, may or may not have adequate knowledge in the area of operation of the rescue unit involved in the recovery of a downed aircrew member(s).

The objective of an ARRS force involved in an Aircrew Recovery (ACR) mission is generally a pilot who has bailed/ejected from a disabled aircraft. Normally, he will not be in the immediate vicinity of a tactical target because he remains in his aircraft as long as possible in order to escape or to put as much distance as possible from the hostile environment. Hence, the geographical location of the rescue objective will most likely not be covered in the intelligence data available to a tactical wing. Additionally, the time period between the location of the rescue objective and the recovery mission is a matter of minutes rather than hours. Therefore, ARRS forces must have all available intelligence data prior to each mission. An alternative to this could be a system utilizing computer techniques, and a data display in the cockpit of the SAR aircraft should be developed which would permit a continuously current intelligence briefing of the aircrew while proceeding to a Search and Rescue incident. Computer data display stations should be installed in the JSARC for display of the hostile situation, both ground and air, in the area of the incident. Such a system should also be linked to a theater-wide system for the input of personal authenticator information on all theater crew members. An electronic relay of this information should be made to the display system in the ARRS aircraft.

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Current SAR operations in Southeast Asia have shown that intelligence data secured from friendly ground forces is invaluable during actual ARRS mission prosecution. Once this contact is established, it also insures maximum cooperation of these same ground forces in suppressing or eliminating hostile ground actions directed against the recovery mission.

This letter went on to say that if the large volume of intelligence data needed could be stored in the JSARC and only selected information appropriate to the specific mission be relayed to the airborne ACR aircrew the efficiency and effectiveness of the recovery effort would be greatly increased.

Whether such a highly sophisticated system becomes available the need for a viable, effective intelligence system urgently needs satisfaction. This system must be tailored to provide the timely, accurate, specialized operational intelligence so badly needed by SAR controllers and ACR aircrews to contribute to sound ACR mission decision making and successful ACR mission prosecution.

e. COMMUNICATIONS.

HU-16/HC-54:

The installed avionics equipment in ARRS aircraft, prior to the introduction of the HC-130, was inadequate to effectively support the airborne command post function. Available documentation did not reveal any

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insurmountable problems with regard to maintaining the equipment that was installed.

HH-3:

The rapid wide spread deployments and the major aircraft modifications that adversely affected logistic support for the HH-3's also had a detrimental impact on communications support in SEA. Within the span of a few months, 20 HH-3 helicopters had been deployed to SEA and were operating from two locations.⁴⁸ Additionally, during the modification program the avionics package was changed to include the installation of eight additional items. They were:⁴⁹

AN/ARC-54 FM Radio.

HF-103 SSB Radio.

VHF-101 AM Radio.

AN/APN 130 Doppler Navigation System.

AN/APX 64 Transponder.

LORAN C.

VHF FM radio homing adaptor.

AM 3969 pre-amplifier for UHF homing adaptor.

All support assets were drastically reduced and depot stock levels on some items were depleted during the initial aircraft deployments and during establishment of their units. Adding to those initial support problems

were aircraft that the Air Force had accepted without certain Government Funded Avionics Equipment (GFAE) components such as; rate-of-flow indicators and Bearing-Distance-Heading Indicators (BDHI). Those shortages resulted from the lead times required to acquire GFAE vs the accelerated aircraft delivery schedule demanded by the Air Force.⁵⁰

The initial spares and AGE deployed to Udorn were incomplete in range and depth. Also, avionics AGE was short bench mockups and test equipment.⁵¹ Both the incomplete spares support and shortage of AGE contributed to the high NORS rate and required rapid return of reparable to the CONUS for repair. The availability of those shortages at Udorn would have complemented base repair of the already critical HH-3 avionics equipment and precluded the use of premium transportation for their return to CONUS.

Items that caused high NORS rates were:⁵²

VHF VOR 101 Receiver, WRAMA get well date for base stockage, March 1969.

RT 463/-34 Receiver - Transmitter, Radio, WRAMA get well date for base stockage, May 1969.

AN/APN-175 Receiver - Transmitter, WRAMA get well date for base stockage, September 1969.

AN/APN-175 Antenna, WRAMA get well date for base stockage, August 1969.

AN/APN-175 Frequency Tracker, WRAMA get well

date for base stockage, October 1969.

The above indicated a lack of adequate communications support and further indicated that said support would remain inadequate until the get well dates were met.

HC-130:

ARRS first deployed HC-130's into SEA in the summer of 1966, and the aircraft were equipped with many new avionics systems that required maintenance personnel to receive additional training. Therefore, a communications-avionics technical representative was sent to a CONUS ARRSq in May 1966 to train the initial cadre of maintenance personnel being deployed to SEA. That training included instruction on the ARD-17 aerial tracker, the DFA-730 ADF, and the ARN-78 LORAN C. After the initial training on the ARN-78, ARRS decided that the APN-157 LORAN C was a more desirable set and plans were made to install the ARN-157 in all aircraft during the Phase II updating program, TCTO IC-130(H) H-567.⁵³

The decision to install the APN-157 caused immediate retraining problems. The avionics technical representative assigned to provide the avionics instruction had to be retrained on the new LORAN equipment in a short time, new test equipment had to be procured, and the HC-130 aircraft had to be modified to accept the APN-157 system.⁵⁴

Other avionics systems were programmed to be installed in the HC-130's; however, due to poor planning and deficiencies in the procurement, the aircraft were delivered without the APX-66 Identification Friend or Foe (IFF) Interrogator, APN-157 LORAN C and part of the DFA-730 ADF equipment installed. The original plan was to install those systems during Phase II updating, but due to further slippage, only the "A" components (mounts and wires) were installed. Because of those shortages, the aircraft were originally carried as Not Operationally Ready Supply - Navigation (NORS-N) and later as NORS-N GFAE shortages. Eventually, all of the DFA-730 ADF items and the APN-157 systems were installed and supportable. The APX-65 system became operational in May 1968 without the necessary AGE or Maintenance and Organizational (M&O) spares available to support the field units. The estimated get well date for support of the APX-65 was July 1969.⁵⁵

Considerable difficulty was experienced in obtaining repair capability for Communications and Electronics (C&E) equipment. There were 25 major pieces of C&E equipment in the HC-130, and in July 1967, the following arrangements were made for C&E support:⁵⁶

6200th Materiel Wing (PACAF) Clark AB, Philippines,
15 pieces.

604th Military Airlift Support Sq. Clark AB, Philippines,
three pieces.

31st ARRSq Clark AB, Philippines, one piece.

One system, the APX-65 IFF Interrogator, was not yet in use and there was no support at all for the other five items. The components for some items had arrived, but none combined to form a complete system.⁵⁷

A major problem the C&E Shop experienced prior to 15 July 1967 was the lack of an AN/APN-59 Search Radar Mock-Up. Consequently, when a 39th ARRSq aircraft needed radar maintenance, it generally entailed a complete black box change which in turn required a replacement part straight from the depot. Various supply channels were queried in an effort to resolve the problem, but a mock-up was not available.⁵⁸

The remains of a salvaged C-130 at Tuy Hoa still contained cannon plugs and electrical wiring -- the major materials needed for the APN-59 mock-up. That material was removed from the salvaged aircraft and three industrious squadron airmen constructed a mock-up during their spare and off-duty time. The project took between 280 and 350 man-hours to complete, and the total cost to the Air Force was estimated at 350 dollars. The factory model cost over 4,000 dollars.⁵⁹

The direct result of manufacturing that mock-up was the C&E Shop's NORS rate dropped to almost zero, and the base self-sufficiency rate was increased from 63% to 95%. The initial savings to the Air Force

was 3,600 dollars, not to mention the dollars saved as a result of cost effectiveness.⁶⁰

Communications support for the HC-130 fleet was considered inadequate, although the aircraft were able to perform their assigned tasks.

HH-53:

A major communications problem for the HH-53 concerned the APN-175 Doppler. A version of the APN-175 had been previously used by the U. S. Army and was called the ASN-64. Representatives of the Air Force and U. S. Coast Guard met at WRAMA in November 1966 to establish guidelines and actions necessary to support their version of the ASN-64, the APN-175. Action items were levied on various agencies and if those actions had been completed, support for the APN-175 in SEA would have been excellent. However, somewhere the program was dropped and no action was taken. The HH-53's were delivered to SEA with the system installed but there was no supply support, bench mock-ups or test equipment. A Contractor Field Services (CFS) representative assigned to the 3d ARRGp provided maintenance assistance and training, and through close contact with the contractor he was able to get bits and pieces not available through channels. That supported the system with some degree of success.⁶¹

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f. AIR REFUELING.

The original plan was to have a minimum of six HC-130's and eleven HH-3's, modified for air-to-air refueling, operational in SEA by 1 July 1966. On 28 October 1965, the MATS Commander recommended to Chief of Staff, Air Force, that development of air-to-air refueling for those aircraft be rephased and expedited to meet the July 1966 target date. It was further requested that the first modified aircraft of each type be provided to ARRS not later than 15 January 1966. The first two aircraft were to be suitably configured to permit the accomplishment of air-to-air refueling training. ARRS would furnish crews, conduct Category III testing, formulate operational tactics and fly simulated combat aircrew recovery profile missions. By 15 April 1966, ARRS was to commence training the initial SEA forces commensurate with the availability of four refueling configured HC-130's and two HH-3's. That training was to be completed by 15 June 1966, trained crews would be deployed to SEA and previously deployed pilots would receive in-country training.⁶²

The above schedule of events slipped at various phases due to revised aircraft delivery dates, etc. However, the first two HH-3's arrived in SEA on 9 November 1965, followed by two on 15 November, and the fifth and sixth arrived in Udorn on 9 December.⁶³

The first eight HH-3's that arrived in SEA did not have an air-to-air

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refueling capability, and the modification was accomplished in-country. An HH-3 modification and installation facility was established at Don Muang Airport, Thailand and Sikorsky Aircraft Corporation, under contract to the Air Force, commenced work on 25 May 1967. The project was completed on 23 October 1967. The above modification also included the installation of three swivel gun mounts in each helicopter. The 3d ARRGp provided a liaison team that consisted of one maintenance officer and one non-commissioned officer, and the modification was performed by a team of Sikorsky Aircraft specialists.⁶⁴

Due to the Phase II updating, which included the in-flight refueling capability, there was a slippage in HC-130 deliveries.⁶⁵ The first HC-130's arrived in SEA in late 1966 but were not tanker configured. Replacement of those aircraft with the tanker model HC-130's began in March 1967. The inbound aircraft transited Tachikawa en route to Udorn, where 39th ARRSq maintenance personnel installed in-flight refueling pods and crew position armor.⁶⁶

After the arrival of the HC-130's and HH-3's with an air-to-air refueling capability, the aircrews received in-country training. In fact, the first combat air-to-air refueling mission, for the HH-3/HC-130, was flown on 8 May 1967 when two aircraft on a training mission over the Gulf of Tonkin diverted in-land to recover the crew of a downed HH-43.⁶⁷

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Routine air-to-air refueling operations began in SEA on 21 June 1967, and the first combat operational air refueling took place on 18 July 1967.⁶⁸

All HH-53's deployed to SEA were capable of air-to-air refueling upon arrival and the aircraft commanders were trained in air refueling operations; however, the copilots were not. An in-country training program was required to qualify the copilots in air refueling operations.⁶⁹

Air refueling support in the theater was adequate; however, the overall air refueling support must be considered inadequate due to the following:

- (1) Requirement to modify aircraft in-theater.
- (2) Requirement to train aircrew members in-country,

especially the HH-53 copilots.

g. RESEARCH AND DEVELOPMENT. All facets of Research and Development were covered in Section V, Volume I, USAF Search and Rescue in Southeast Asia, 31 January 1969.

h. OTHER. None.

2. ADDITIONAL CONSIDERATIONS: None.

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3. SUMMARIZE LESSONS LEARNED.

a. Accelerated production programs to meet urgent combat demands negated the total effectiveness of the ACR aircraft due to inadequate spare parts production.

Both of the helicopters provided for the ACR missions were hastily modified to meet an immediate combat need, and neither vehicle met the long-term ACR requirement. The above procedure also placed aircraft in the field with no available means of support. Non-availability of support was a result of the following:

(1) Spare parts production had not kept pace with aircraft production and modification.

(2) Rapid deployments were made into areas before adequate supply support was established.

(3) Reliable consumption data was not available for the new aircraft.

b. A general lack of avionics spares and inadequate AGE to support installed avionics equipment seriously impaired maintenance efforts and degraded mission capability.

As pointed out in the communications discussion, both incomplete

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spares support and shortage of AGE contributed to the high NORS rates and required the air shipment of reparables to the CONUS. The seriousness of the problem was clearly reflected by a comparison of the WRAMA get well dates for base stockage vs the date the aircraft arrived on station. The first six HH-3's were in place at Udorn in December 1965, but the get well dates on the five major items responsible for their high NORS rates ranged from March 1969 to October 1969.

c. Intelligence support provided ARRS units was neither sufficiently immediate nor ACR mission oriented to permit proper assessment of conditions prevailing or likely to prevail in mission areas or along mission routes. This seriously inhibited ACR mission planning and execution.

4. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS.

The conceptual and doctrinal recommendations listed below, subparagraphs a and b, generally support, in the same alphabetical order, the lessons learned that have been listed above:

a. That a combat ACR vehicle to meet the long-term ARRS requirement be produced and an adequate air transportable maintenance support kit be provided for deployment support.

The availability of an effective combat ACR aircraft at the onset of hostilities would have eliminated many of the support problems

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experienced in SEA. The addition of an adequate maintenance support kit would also have eliminated many logistic support problems. Further, reliable consumption data would be available on an operational aircraft which would provide a basis for the establishment of the maintenance support kit and the establishment of initial base stock levels. The consideration to rapidly deploy a weapon system should never override the support considerations required to ensure its operational capability. A sophisticated aircraft tied to the ramp for lack of parts is of no value to the combat effort, it merely takes up vital space and assists in bogging down other supply efforts.

- b. That avionics spares and associated support equipment either precede or accompany aircraft to deployment bases.

Even though an aircraft can often be flown without certain avionics equipment, the degradation of mission capability is unacceptable. The same emphasis should be placed on the production and supply of avionics spares as should have been placed on the production and supply of other aircraft spares. The difficulty experienced in obtaining repair capability for the 25 major pieces of HC-130 C & E equipment, was a good example of the importance of avionics spares and related support equipment. In July 1967, arrangements were made with three different organizations for the repair of nineteen items.

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Of the remaining six items, one had not been installed in the aircraft, and there was no support for the other five.

c. Provision of specialized operational intelligence support of all ACR missions is urgently needed. This will necessitate authorization and assignment, within the ARRS organization, of enough professional Intelligence Officers and NCO's to establish and operate a specialized SAR intelligence training, collection, processing and dissemination program designed specifically to satisfy ARRS peculiar operational intelligence needs for combat SAR mission planning, aircrew briefing and interrogation and post-mission reporting. Effectiveness of this system could be enhanced by a computerized operational intelligence system to provide cockpit display of selected data needed for a specific mission from a JSARC data bank.

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SUPPORT ANALYSIS

1965 - 31 March 1968

FOOTNOTES

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3. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, Subj: Commanders Letter, 11 Aug 1967, p. 2.
4. Ltr, Major Robert M. Masters, undated, p. 1.
5. Ltr, Hq ARRS (ARMMTC/Capt Dunn/4862) to Hq ARRS (ARMLG/Capt Gunn), Subj: Input to Corona Harvest, 10 Jan 1969, p. 1.
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8. 3d ARRGp History, 1 April - 30 June 67, Extract.
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37. Ltr, 3d ARRGp (RGCO) to Comdr ARRS, 6 July 1966, op. cit., p. 2.
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PLANS, CONCEPTS, AND DOCTRINE ANALYSIS

1965 - 31 March 1968

1. WERE PLANS AVAILABLE?

A number of ARRS programming plans were identified as impacting the ACR system primarily from the viewpoint of establishing, disestablishing, equipping or reequipping ACR units in SEA.

Also available were a number of doctrinal and directive documents which, generally speaking, reconfirmed the wartime SAR mission and served to clarify SAR relationships, channels, procedures and responsibilities at and among the various levels of command.

2. WHO WROTE THEM?

The ARRS programming plans were written by Hq ARRS, generally implementing direction from USAF and MAC, providing direction and guidance for ARRS staff and units involved and information for other agencies concerned.

The highest level of procedural guidance was provided by the tri-service directive, AFR 55-7 (later 64-3), Army Regulation (AR) 525-90, Navy War Plan Supplement (NWP SUPP) 37(A), which prescribed wartime SAR procedures approved by the Joint Chiefs of Staff (JCS). This directive was written primarily by the Air Staff with full Army and Navy coordination.¹

Announcement of USAF SAR doctrine in depth was made in Air Force

Manual 2-36, Operational Aerospace Doctrine; Search, Rescue and Recovery Operations. This document was written initially, primarily by Hq ARRS, then was coordinated and published by the Air Staff.²

AFR 23-19, Organization and Mission - Field, Aerospace Rescue and Recovery Service (ARRS), was rewritten by the Air Staff from AFR 20-54, prescribing the policy, mission, organization and responsibilities of ARRS.³

Pacific Command (PACOM) published Commander in Chief Pacific Instructions (CINCPACINST) 3130.2B to prescribe Wartime SAR for US Military Forces in the CINCPAC Area of Responsibility. This document passed to Pacific Air Force (PACAF) the SAR responsibility for the Pacific overseas region which included SEA.⁴

Pacific Air Force Regulation (PACAFR) 55-90, implementing this responsibility, was published by PACAF. Its stated purpose was to establish search and rescue responsibilities and outline the Search and Rescue organization within PACAF. It provided specific direction to the Commander, 7th AF, for SAR in SEA as a part of its coverage of the subject within the whole PACAF area of SAR responsibility.⁵

PACAF SAR Plan 120-67 contained detailed instructions for implementation of PACAF Reg 55-90. Its coverage was also, of course, much broader than just the SEA area; but it contained much data directly applicable

to the theater. It provided tasks for Commander, 7th Air Force, including operation of the JSARC and Rescue Control Center (RCC)'s. His operational control of ARRS forces assigned to 3d ARRGp was to be exercised through Commander, 3d ARRGp, (except LBR's (Local Base Rescue) which were to⁶ be controlled through the appropriate base commanders.)

Prior to this period, the Thirteenth Air Force (13th AF) had published a supplement to PACAFR 55-90 which passed to 2d Air Division (later 7th Air Force) SAR responsibility for the SEA sub-region which had been placed in 13th AF by PACAFR 55-90.⁷

Second Air Division Regulation (2d ADR) 55-20 was published by 2d Air Division to prescribe SAR operations in SEA in response to the responsibility placed by the previously discussed 13th AF Supplement to PACAFR 55-90.⁸

Later, an Army, Navy, Air Force and Marine SEA joint SAR directive was published by 7th Air Force to promulgate the responsibility and authority for the conduct of joint SAR operations in the SEA sub-region pursuant to the provisions of JCS Pub 2, National SAR Plan, CINCPAC Instructions 3130.1 series and 3130.2 series and PACAFR 55-90.⁹

Seventh Air Force also published 7th AFM 64-1 to outline the organization, command and control structure, composition of the SAR task

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force, the concept of operations, facilities and equipment and the procedures employed in the conduct of the SAR and aircrew recovery mission in SEA.¹⁰

3. WHEN WERE THEY WRITTEN?

ARRS Programming Plan (PP) 568 was published in April 1965 with Change 1, July 1965. Its stated objectives as they pertained to the ACR function were:¹¹

To program staff actions required to man, equip, train, introduce and achieve the early operational mission status of six combat configured HH-3C UE helicopters in the 38th Air Rescue Squadron in FY 2/66.

Move 3 HH-3C helicopters with appropriate qualified personnel and equipment to Da Nang AB, RVN and incorporate them into Det 7, 38 ARSq.

Move 3 HH-3C helicopters with appropriate qualified personnel and equipment to Nakhon Phanom AB, Thailand and incorporate them into Det 1, 38 ARSq.

ARRS Programming Plan (PP) 571 was written in November 1965 with one change published in December 1965. Its stated objectives were:¹²

To program staff actions required to man, equip, train, introduce and achieve the early operational mission status of ten combat configured HH-3E UE helicopters in the 38th Air Rescue Sq during FY 3/66 and FY 4/66.

Move 8 HH-3E helicopters from CONUS with appropriate qualified personnel and equipment to

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Da Nang Apt, RVN and incorporate them into Det 7, 38th ARSq.

Move 2 HH-3E helicopters from CONUS with appropriate qualified personnel and equipment to Udorn Afd, Thailand and incorporate them into Det 5, 38th ARSq.

To program staff actions required to realign existing 38th ARSq resources, to provide the maximum Local Base Rescue (LBR) and Aircrew Recovery (ACR) coverage for US aircrews operating in Southeast Asia. This realignment is in accordance with PACAF approved SEA SAR requirements.

ARRS PP 574 was published on 15 December 1965 with Change 1 on 18 January 1966. Its stated objectives were:¹³

To program required staff actions which will organize existing and future programmed Aerospace Rescue and Recovery Service (ARRS) organizations based in the Southeast Asia area under an Aerospace Rescue and Recovery Service Group (ARRGp) structure. The effective date for the organization is 1 January 1966 and the following programming actions are included:

Activate and establish the 3rd Aerospace Rescue and Recovery Group Headquarters at Tan Son Nhut Air Base, Republic of Vietnam. The proposed manning for the Group Hq is 16 officers and 19 airmen.

Activate and establish Aerospace Rescue and Recovery Service Control Centers (RCC's) at Da Nang Airport RVN, (Det 1) and at Udorn Airfield, Thailand (Det 2), of the 3rd Aerospace Rescue and Recovery Group. The proposed manning for each RCC is 3 officers, 3 airmen.

Establish the 37th Aerospace Rescue and Recovery Squadron at Da Nang Airport with 5 UE HU-16B aircraft, 27 officers, 74 airmen. Flying hour allocation will be

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65 hours/aircraft/month. Crew ratio will be 1.5 to 1. The resources required to activate this unit will be obtained from the following units. AROSD will publish aircraft distribution orders effecting these transfers.

Transfer 3 UE HU-16B aircraft from the 58 ARRSq, Wheelus AB Libya with appropriate manpower spaces.

Transfer 1 UE HU-16B aircraft from the 41st ARRSq, Hamilton AFB, Calif. , with appropriate manpower spaces.

Transfer 1 UE HU-16B aircraft from the 48 ARRSq, Eglin AFB, Florida, with appropriate manpower spaces.

Activate and establish Detachment 1, 37th ARRSq at Udorn Airfield with 1 manpower authorization, 2 HC-54D and 2 HC-130H aircraft. The HC-130H aircraft are expected to be available not later than 31 January 1966. This mixed force of aircraft will be provided through TDY of aircraft, crews and maintenance personnel from the 36th ARRSq, Tachikawa AB, Japan, 79th ARRSq Andersen AFB, Guam, and the 54th ARRSq, Goose AB, Labrador. ARRS (AROR) will publish operations orders for TDY movement of aircraft and aircrew members. If either type aircraft cannot be made available, a minimum of 4 four-engine aircraft will be selected and maintained from those available in ARRS until Detachment 1, 37th ARRSq is equipped with 4 UE HC-130H aircraft. (See ARS Programming Plan 575, title "Equipage of Det 1, 37 ARRSq with HC-130H aircraft," for future programming actions).

ARRS PP 575 was also published on 15 December 1965 with Change 1, 22 March 1966 and Change 2, 15 April 1966.

Its stated objectives were:¹⁴

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Incorporate 4 UE HC-130H aircraft (configured for HH-3E helicopter air-to-air refueling) with associated crews, support personnel, and equipment into Det 1, 37 ARRSq at Udorn, Thailand.

Monitor, advise and assist in the research, development, test and production of air-to-air refueling equipment for HC-130H and HH-3E aircraft.

Perform air-to-air refueling testing at Wright-Patterson AFB, Ohio.

Assemble the nucleus of Det 1, 37th Aerospace Rescue and Recovery Squadron personnel at Hamilton Air Force Base during FY 4/66 to:

Provide six HC-130H combat crews with Rescue and Recovery Tactical Training.

Move Det 1, 37th Aerospace Rescue and Recovery Squadron HC-130H aircraft and personnel from the CONUS to Udorn, Thailand to initiate the HC-130H/HH-3E team concept of combat aircrew recovery operations with the 8 UE HH-3E's presently programmed to Det 5, 38th ARRSq. (Reference ARS Programming Plan 571.)

ARRS PP 571A, written in May 1966, superseded ARRS PP 571.

Change 1 was issued on 20 September 1966. Its stated objectives were:¹⁵

To program Hq ARRS staff actions and ARRS subordinate units' actions required to equip the 38th ARRSq with ten additional UE HH-3E helicopters during FY 4/66 and FY 1/67.

Move 2 HH-3E helicopters with appropriate qualified personnel and equipment from CONUS to Udorn AB Thailand, and incorporated them into Det 5, 38th ARRSq.

Move 8 HH-3E helicopters with appropriate qualified personnel and equipment from CONUS to DaNang AB,

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RVN, and incorporate them into Det 7, 38th ARRSq.

To program Hq ARRS staff actions and ARRS subordinate units' actions required to realign existing 38th ARRSq resources to provide the maximum Local Base Rescue (LBR) and Aircrew Recovery (ACR) coverage possible for US aircrews operating in Southeast Asia. This realignment is in accordance with approved SEA requirements.

ARRS Programming Plan (PP) 580, published in August 1966, had four published changes. The date of Change 1 was unknown, Change 2 was dated 28 September 1966, Change 3, 30 November 1966 and Change 4, 22 May 1967. The objectives as stated in Change 4 were:¹⁶

To meet an urgent requirement for improved aircrew recovery capability within the Aerospace Rescue and Recovery Service (ARRS), by introduction of HH-53B helicopters to the ARRS inventory.

To meet a requirement for improved manned space flight recovery operations for the NASA and the USAF Manned Orbiting Laboratory (MOL) programs. The heavy lift HH-53B will provide a capability for simultaneous recovery of both spacecraft and astronauts during various recovery modes, and will exceed the lift capacity, range and speed of the CH-3.

To program Hq ARRS staff actions and ARRS subordinate unit actions required to man, equip, train, and achieve operational status with eight combat configured HH-53B helicopters by Mid FY 2/68.

To perform in-flight refueling testing at the Sikorsky Aircraft Factory.

To provide ARRS with a total of 14 fully operational ready aircrews and ground support personnel. Two crews will form a training/operational unit at the

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48 ARRSq, Eglin AFB, and 12 crews will deploy to Udorn AFB, Thailand to form an operational unit (Det 2, 37 ARRSq), after completing training at Eglin AFB, Florida, during FY 1/68 through FY 2/68.

ARRS PP 583 was published on 10 October 1966. Its stated objectives

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were:

To program Hq ARRS staff actions and ARRS subordinate units' actions to equip 37th ARRSq with 11 HC-130P (configured for air-to-air HH-3E/HH-53B refueling) with associated crews, support personnel and equipment during the period of FY 2/67 through 4/67.

Monitor, implement and/or revise (as required) HC-130P production/Phase II release/input schedule.

Position HC-130P's and CH/HH-3E's/HH-53B's and aircrews/support personnel at the 48th ARRSq during FY 2/67 through 4/67, (IAW Aircraft Programming and Utilization Schedule, Annex A this plan) to:

Provide 17 HC-130P combat aircrews with Rescue and Recovery Tactical Training. (See Note * below.)

Provide 13 HC-130P combat aircrews with helicopter air-to-air refueling training. (See Note ** below.)

Provide Fulton Recovery training (ground-to-air) to selected HC-130P aircrews as specified in Annex A.

Provide Refueling Systems training (HC-130P) to Airplane General (AFSC 431X1/71F) and Hydraulics (AFSC 421X2) maintenance personnel as specified in Annex A.

All American Recovery (air-to-air) training will not be given to crews scheduled for SEA.

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NOTES:

*6 additional crews required to receive training to replace 6 HC-130 crews rotating early (Mar 67) from Udorn.

**Initial 3 aircrews receiving training November through December 1966 will not receive air-to-air refueling training due to lack of CH/HH-3E/HH-53B (configured for air-to-air refueling) availability. These 3 crews will receive refueling training/qualification in SEA.

Deploy 6 HC-130P aircraft with appropriate qualified personnel and equipment, (IAW Schedule Annex A of this plan), to Det 1, 37th ARRSq, Udorn, Thailand.

Deploy 5 HC-130P aircraft with appropriate qualified personnel and equipment, (IAW Schedule Annex A this plan), to 37th ARRSq, DaNang, RVN.

To program Hq ARRS staff actions and ARRS subordinate unit actions to reassign 4 HC-130H's from Det 1, 37th ARRSq, Udorn, Thailand to Hq ARRS designated squadrons, pending Phase II modifications.

To program Hq ARRS staff actions and subordinate unit actions for reassignment of the 5 HU-16B's from 37th ARRSq, DaNang, RVN.

ARRS PP 582 was published in December 1966 with Change 1 dated 16 February 1967 and Change 2, 14 April 1967. Its preface included the statement that it would run concurrently with PP 571A. The format of this plan varied from the previous pattern in that the objectives were not stated as such. However, analysis of the sections,

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Situation and Mission, can be summarized as follows. The plan provided guidance to move six additional HH-3E aircraft with necessary personnel and equipment to the 37 ARRSq at Da Nang AB, RVN during FY 3/67 and 4/67.¹⁸

The evolution of direction, external to the Pacific theater, included publication of the SAR doctrine manual, AFM 2-36, on 1 June 1965, and its re-issue, with slight change, on 3 January 1967. It presented operational doctrine and policies governing aerospace search, rescue and recovery operations for personnel and materiel during both peace and war. It also provided guidance for personnel and activities supporting, being supported by, or coordinating with MAC/ARRS.¹⁹

The ARRS mission directive regulation, originally published as AFR 20-54 in the Organization and Mission - General series, was republished on 2 December 1965 as AFR 23-19 in the Organization and Mission - Field series. On 14 March 1967, AFR 23-19 was rewritten with one Change published 11 April 1967.²⁰

The tri-service directive, AFR 55-7, AR 525-90, NWP SUPP 37(A), prescribing wartime SAR procedures, approved by the JCS to be used throughout the Armed Forces, was published on 13 August 1965, and was re-issued with minor changes on 31 May 1967 as AFR 64-3 with Army and Navy designations

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remaining unchanged.²¹

Internal PACOM SAR guidance, starting at the top in the form of CINCPAC Instruction 3130 series, evolved from .2A dated 21 May 1959, which established standardized wartime SAR procedures for U.S. military forces operating in the CINCPAC area, and .1B dated 10 June 1963, which documented SAR procedures in the PACOM, both civil and military. This broad SAR instruction was re-issued as .1C on 25 June 1965. Change 1 to .1C, dated 21 November 1966, changed responsibility for SEA SAR coordination to the Commander, 7th AF.²² The 1959 wartime SAR instruction 3130.2A was re-issued as .2B on 2 September 1967.²³

PACAF direction evolved as PACAFR 55-90 dated 2 October 1963, through a re-issue dated 20 March 1966, to a 15 November 1966 issue with Change A published 16 June 1967. This PACAF series provided direction for both civil and military SAR and was responsive to CINCPACINST 3130.1 series.²⁴

PACAF implementing plan, SAR Plan 120-67, was apparently published in 1967; but the specific date was not contained in the plan. It stated that it provided an overall SAR plan for the effective utilization of all available facilities for all types of SAR operations and included provisions for the control and coordination of forces contributing to the SAR effort.²⁵

Thirteenth AF Supp 1 to the 2 October 1963 PACAFR 55-90 had delegated SAR coordination responsibility for SEA to 2d Air Division.²⁶

This responsibility was reflected in 2d ADR 55-20 published on 4 March 1966, as it superseded 2d ADR 55-20 dated 14 January 1965 and 55-20A dated 1 April 1965.²⁷

In November 1966 Change 1 to CINCPACINST 3130.1C gave this SEA SAR responsibility and authority to 7th AF, thus removing 13th AF from the SEA SAR chain of command. Promulgation was by publication on 5 April 1967, of a joint SAR SEA directive, 7 AFR 64-2, Naval Forces Vietnam Instruction (NAVFORVINST) 3130.1, US Army Regulation Vietnam (USARV) 95-8, Commander Seventh Fleet Instruction (COMSEVENTHFLTINST) 3130.2, THIRD Marine Amphibious Force (MAF) ORDER 003130.1.²⁸

On 1 March 1968, Seventh Air Force Manual 64-1, SAR SEAsia, was published, providing a comprehensive, detailed guide to the broad spectrum of SAR operations in SEA.²⁹

The foregoing discussion has traced development of the most pertinent directives impacting the SAR command and control function within SEA. To establish a basis it was necessary to reach both outside the theater and back into earlier periods. In some instances, knowledge of the early origins were not readily available so complete evolution could not be provided; however,

evolution of the directives was traced through each command concerned. A time-line chart was developed to provide a basis for establishment of temporal interrelationship among them. (Ref Tab G)

4. WERE THEY ADEQUATE?

The ARRS programming plans apparently were adequate to accomplish their stated objectives. This evaluation included consideration of changes made to accommodate changed direction furnished after the plan was published. Also, allowance was made for the fact that, in the interest of timely publication, it was necessary to make assumptions concerning anticipated actions of other agencies. Some of these actions were as basic as the approval of the concept on which the plan was based, such as approval of a Program Change Proposal (PCP) providing the forces involved.

Generally speaking, determination of adequacy of the other documents under discussion was limited to the latest available version of each document. The laborious detailed study of each series of documents as it evolved would serve no purpose and would constitute a redundant effort, in that most of the changes in these documents were part of a self-cleansing process to rid the documents of prevailing inadequacies.

The tri-service directive, AFR 64-3, AR 525-90, NWP SUPP 37(A), dated 31 May 1967 expands on the basic SAR guidance in Section 4, Unified

CHRONOLOGY OF SOME DEPARTMENT OF DEFENSE DIRECTIVES IMPACTING SAR IN SEA

Calendar Year	Joint Service	USAF	PACOM	PACAF	SEA Joint Service	2d AD 7 AF
1959 to 1962	AFR 55-7 JCS PUB 2	AFR 20-54	INST 3130.2A INST 3130.1	PAFR 55-90		
1963			INST 3130.1B 10 June 63	PAFR 55-90 2 Oct 63 13 AF SUPP		
1964						
1965	AFR 55-7 13 Aug 65	AFR 23-19 2 Dec 65	AFM2-36 1 Jun 65	INST 3130.1C 25 June 65		2d AD 55-20 14 Jan 65 2d AD 55-20A 1 Apr 65
1966			Change 1 21 Nov 66	PAFR 55-90 20 May 66 15 Nov 66		2d AD 55-20 4 Mar 66
1967	AFR 64-3 31 May 67	AFR 23-19 14 Mar 67	AFM 2-36 3 Jan 67	INST 3130.2B 25 Sep 67	PAFR 55-90A 16 Jun 67	PACAF 7 SAR PLAN AFR 120-67 64-2 5 Apr 67
1968						7 AFM 64-1 1 Mar 68

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CHRONOLOGY OF SOME DEPARTMENT OF DEFENSE DIRECTIVES IMPACTING SAR IN SEA							
Calendar Year	Joint Service	USAF	PACOM	PACAF	SEA Joint Service	2d AD 7 AF	
1959 to 1962	AFR 55-7	JCS PUB 2 AFR 20-54	INST 3130.2A	INST 3130.1	PAFR 55-90		
1963			INST 3130.1B 10 June 63	PAFR 55-90 2 Oct 63 13 AF SUPP			
1964							
1965	AFR 55-7 13 Aug 65	AFR 23-19 2 Dec 65	AFM2-36 1 Jun 65	INST 3130.1C 25 June 65		2d AD 55-20 14 Jan 65 2d AD 55-20A 1 Apr 65	
1966			Change 1 21 Nov 66	PAFR 55-90 20 May 66 15 Nov 66		2d AD 55-20 4 Mar 66	
1967	AFR 64-3 31 May 67	AFR 23-19 14 Mar 67	AFM 2-36 3 Jan 67	INST 3130.2B 25 Sep 67	PAFR 55-90A 16 Jun 67	PACAF 7 SAR PLAN AFR 120-67 64-2 5 Apr 67	
1968						7 AFM 64-1 1 Mar 68	

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Tab G

Actions Armed Forces (UNAAF) (JCS Pub 2). It describes the coordination and command relationship of the area commanders as follows:³⁰

Has primary authority and responsibility for SAR within his area.

Will develop and publish supplemental wartime SAR procedures for his area of responsibility, taking into consideration geographic and climatic data, probable areas of operation, countries involved, SAR forces required, available intelligence data, etc.

May delegate SAR authority to subordinate commanders and, by mutual agreement, to Coast Guard or military commanders of other commands.

Will establish joint SAR centers whose functions will be direction and coordination of all SAR facilities within their areas of responsibility. Provisions will be made for all services concerned to actively participate in the joint SAR center. Each service will provide sufficient personnel to insure adequate manning of the component SAR controller position.

Will exercise control, through his component commanders, of SAR forces committed to an incident.

May assign SAR tasks and missions to forces not assigned but based or operating in his area. Control will normally remain with the commander of such forces, who will keep the area commander advised of the availability of his assigned SAR assets. The area commander may assume operational control of these assets for specific SAR missions.

This directive stated the policy, that to operate in hostile areas the peacetime SAR forces must be equipped and trained for the wartime mission.

It further stated that to insure effectiveness of the specified procedures,

component commanders would train personnel in their use prior to the outbreak of hostilities. It did not state, however, that the equipping of the forces for the wartime mission must be done prior to outbreak of hostilities. This lack must be identified as an inadequacy.³¹

The above inadequacy was resolved for the Air Force by the inclusion in the ARRS mission statement in AFR 23-19 that ARRS would maintain combat personnel recovery forces for the rescue of military personnel from hostile areas according to AFR 64-3.³²

The ARRS mission also included providing the air component of JSARC's operated by JCS designated area commanders; or alternately manning, equipping and operating the JSARC for the area commander when so directed. Also included was the mission of providing and operating the SAR component in the air operations centers supporting contingency operations. It also directed major air commanders to furnish support for ARRS units according to AFR 11-4; coordinate SAR/air recovery requirements with the Commander/Deputy Commander(s), ARRS, to insure technical definition of appropriate SAR coverage; and to coordinate required operational capability with the Commander, ARRS as specified in AFR 57-1.³³

There were no apparent inadequacies in AFR 23-19.

AFM 2-36; the SAR doctrine manual, identified SAR activities as
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an essential element in the total aerospace posture of the U. S. It further identified the recovery of military personnel from hostile areas as one of the primary spheres of operational activity into which SAR missions were essentially grouped. It further addressed this sphere of activity as follows:³⁴

Recovery of military personnel from hostile areas is a responsibility of the unified commander or joint commander normally assigned to the air component commander. The air component commander discharges his responsibility through the SAR controller of the joint search and rescue center. To insure optimum utilization of Air Force SAR resources, a professional SAR/recovery advisor functions as a member of the air component commander's staff. The SAR staff member advises the commander of the capabilities and limitations of available SAR forces and makes recommendations for their employment. SAR procedures used in the combat zone are an extension of peacetime procedures supported as necessary by tactical aircraft.

A weakness of this directive appeared in the last sentence. It was less than an adequate description of SAR procedures used in the combat zone.

CINCPACINST 3130.2B, Wartime Search and Rescue Procedures for U. S. Military Forces in the CINCPAC Area of Responsibility, provided as general guidance:³⁵

Wartime search and rescue procedures are basically an extension of existing peacetime SAR organization and procedures in friendly territory, with special provisions incorporated for employment in hostile areas.

The last phrase, although technically correct, was considered

inadequate guidance in that it lacked the specifics necessary to convey a true understanding of the problem.

The more detailed guidance provided the SAR commanders concerning the command and control and organizational functions apparently were adequate.

CINCPACINST 3130.1C covering the broad scope of both civil and military SAR in the PACOM area impacted the command and control function primarily by Change 1, 21 November 1966, which specified that the 7th AF Commander would be SAR Coordinator for SEA. This action sanctioned a relationship previously established by less direct means through 13th AF Supp 1 to PACAFR 55-90.³⁶

PACAFR 55-90 implemented the PACOM directives, taking cognizance of USAF direction on the SAR function. It adequately accomplished its stated purpose of establishing SAR responsibilities and outlining the SAR operational organization within PACAF.³⁷

PACAF SAR Plan 120-67 contained detailed instructions and procedures for the implementation of PACAFR 55-90. It appeared to be adequate.³⁸

The joint Air Force, Navy, Army, and Marine SAR directive for SEA was a succinct distillation of pertinent directives and policy from

higher echelons oriented toward area operations and supplemented for local application. If there was an inadequacy in this directive, it was the lack of firmness with which it dealt with multiservice manning of the JSARC which, in concert with a similar weakness in other directives on this subject, effectively prevented the JSARC from becoming truly "joint" in the full sense of the word.³⁹

The Seventh Air Force Manual on SAR in SEA was a comprehensive treatise of the entire subject of SAR in the theater, well and completely written. It apparently was adequate in all respects except that it was needed two or three years earlier.⁴⁰

5. WERE THEY USED?

The programming plans were all used as changed and superseded. These plans did not provide original and basic direction but responded to such direction to provide a management tool for accomplishing the tasks necessary to satisfy the directed objectives. Therefore, they had to be very flexible and responsive to external direction. Sometimes actions not completed in one plan were carried, where necessary, to another.

The intermixing of actions was evidenced in 3d ARRGp Programming Plan I dated 1 November 1967 with six changes through 28 April 1968. It was to provide for the orderly introduction, employment, and operation of

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the HH-3E/HC-130P/HH-53B combat aircrew recovery system in Southeast Asia and increased the eight possessed UE HH-3E helicopters in the 37th ARRSq to the authorized 14. The in-SEA Inspection and Repair as Necessary (IRAN) of HH-3E helicopters was also provided for in the plan. The plan provided the operational concept and doctrine for the most effective employment of the possessed capability and attendant resources in order to increase the aircrew recovery rate, and introduced four HH-53B helicopters into Det 1, 40th ARRSq, at Nakhon Phanom, Thailand.⁴¹

The utilization of this ACR force was clearly stated in Annex C of this plan. It outlined that the HC-130P's assigned to the 39th ARRSq would be fraggd for both the Gulf of Tonkin and the Laos Airborne Mission Control (AMC) and aerial refueling missions on a dawn-to-dusk basis. One HC-130P would be positioned at Udorn to provide backup AMC and refueling capability for the Laos fraggd helicopter orbit mission and one HC-130P would provide a 24 hour alert capability at Tuy Hoa.⁴²

The 37th ARRSq HH-3E's would support the Gulf of Tonkin orbit mission as fraggd. At times this might require two helicopters on orbit. Two HH-3E's would provide dawn-to-dusk strip alert at the Marine Quang Tri Forward Operation Location (FOL). One of these helicopters might possibly be fraggd to an off-shore orbit during high strike periods and one HH-3E would provide a 24 hour alert capability at Da Nang.⁴³

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The 40th ARRSq would provide two HH-53B's which would normally be fragged every other day for the Sierra Orbit Mission (2040N - 10420E). One HH-53B would provide a 24 hour alert capability at Udorn, when not fragged for the Laotian orbits. Det 1 of the 40th ARRSq would provide two HH-3E's which would normally be fragged every other day for the Sierra Orbit Mission (2040N - 10420E), and two HH-3E's to provide a 24 hour alert capability at Nakhon Phanom.⁴⁴

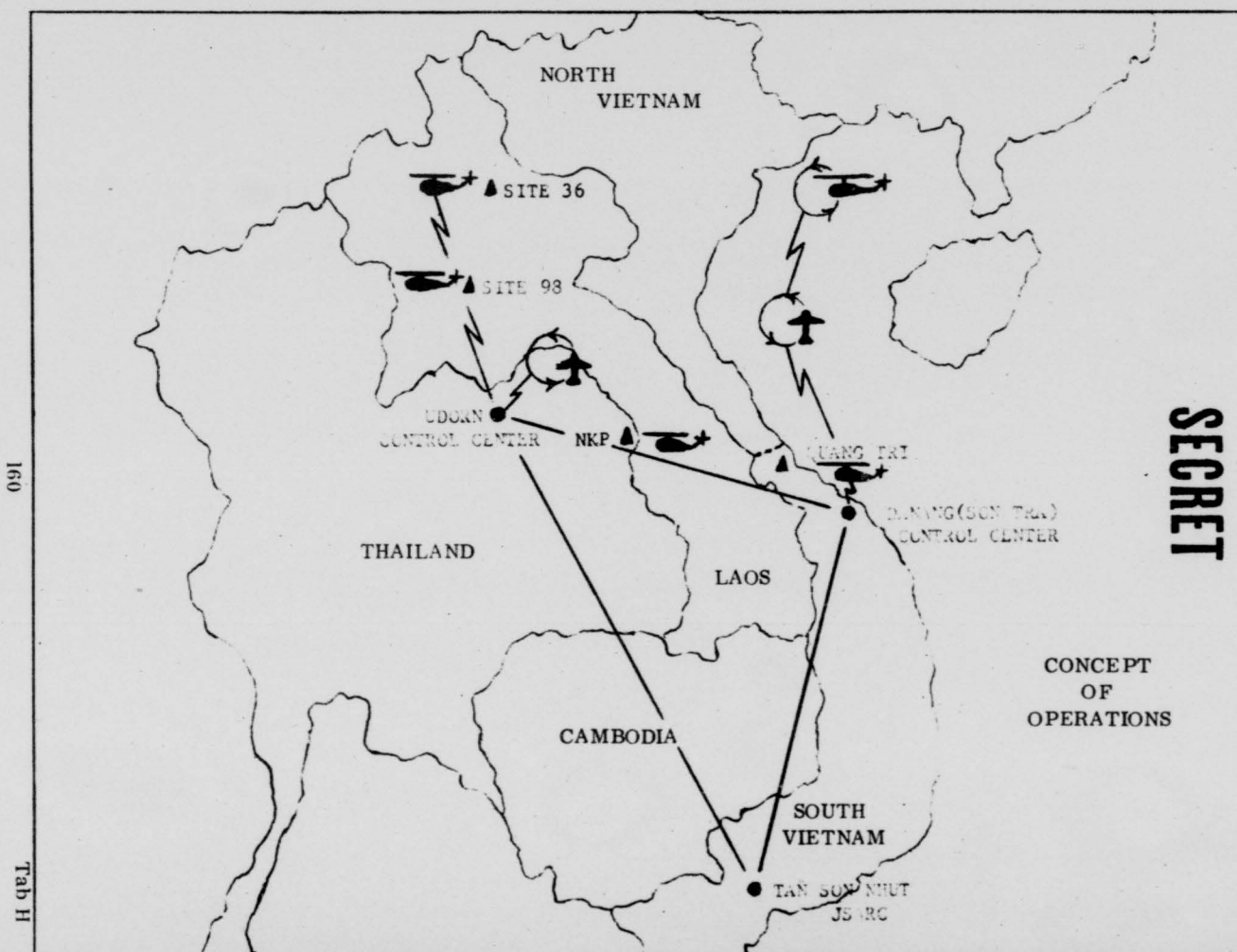
The operational procedures outlined in the 3d Group PP I established orbits in the Gulf of Tonkin and Laos (Ref Tab H). The plan outlined these procedures in detail as follows:⁴⁵

An HC-130P will be fragged (normally one in the morning and one in the afternoon) from dawn-to-dusk for the Gulf of Tonkin AMC and aerial refueling mission. These aircraft are considered "on station" when they cross the 17th parallel outbound and "off station" when they cross it inbound. The HC-130P will plan to off-load approximately 4000 pounds of fuel when an HH-3E is fragged to the Bravo (020-00N-107-07E) Orbit. This is based on a refueling prior to the TOT and refueling after a mission. The HH-3E fragged for the Echo (017-40N - 107-00E) Orbit will not require fuel prior to the TOT but could require fuel for a SAR mission.

The orbit position(s) for the HH-3E's depends largely on the strike area and the fighter egress route. For northern strikes, one HH-3E will be fragged to the Bravo (020-00N-107-07E) Orbit, and when so fragged, a second HH-3E will be fragged to the Echo (017-40N-107-00E) Orbit. The helicopter for the Bravo (020-00N-107-07E) Orbit will be deployed directly from Da Nang and refuel in the vicinity of the

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Charlie (019-00N - 106-30E) Orbit at approximately TOT minus 30 minutes. The helicopter for Echo (017-40N - 107-00E) Orbit will be fragged to deploy from the Quang Tri FOL to be in position for high strike periods and will depart the FOL with sufficient fuel to preclude aerial refueling. For strikes occurring in Route Package I, only the Echo (017-40N - 107-00E) Orbit will be fragged utilizing an HH-3E from the Quang Tri FOL. Again, the HH-3E will depart the FOL with sufficient fuel to preclude aerial refueling. The frag orders may specify, or be changed after the SAR force is enroute to specify, orbits at other than the normal orbit points. This is done to provide strategic ACR coverage for areas of high strike activity.

RESCORT will be provided by A-1E aircraft call sign "Spad" from the 6th ACS squadron at Pleiku. Three aircraft have been positioned at Da Nang to provide 24 hour support for the SAR helicopters. Rescort is also provided by USN carrier based aircraft and they accompany the HH-3E on SAR missions which are executed in the northern reaches of the Gulf of Tonkin. USN ship based helicopters will be airborne or on call to support the ACR mission.

Established orbit points over the Gulf of Tonkin are:

BRAVO	020-00N 107-07E	Rescue helicopters
CHARLIE	019-00N 106-30E	Rescue helicopters
DELTA	018-00N 107-00E	Rescue helicopters
ECHO	017-40N 107-00E	Rescue helicopters
FOXTROT	019-00N 106-50E	HC-130P
GOLF	018-00N 107-30E	HC-130P
HOTEL	016-54N 107-48E(010/30/69)	HC-130P

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Quang Tri Alert: Two HH-3E's will continue to be fragged to maintain a dawn-to-dusk strip alert (scramble) posture at Marine Quang Tri or other FOLs. During the high strike periods, one of the helicopters may be fragged to the Echo (017-40N -107-00E) Orbit while the other helicopter remains on strip alert at the FOL.

Laotian Orbits:

An HC-130P will be fragged (normally one in the morning and one in the afternoon) from dawn-to-dusk for the Laos AMC and aerial refueling mission. The HC-130P will refuel the helicopters at the refueling point prior to each TOT. Subsequent refueling will be as required. An approximate fuel off-load can be computed by using a consumption rate of 1000 lbs/hr for the HH-3E and 2000 lbs/hr for the HH-53B. For all missions, each HC-130P will have the capability to off-load 19,000 pounds of fuel to provide for all contingencies.

Two helicopters (either two HH-3E's or two HH-53B's) will normally be fragged daily for two Sierra Orbit Missions (0240/10420). For the morning missions, the helicopters will proceed from their home base to the refueling area, rendezvous with the HC-130P and refuel, and then proceed to the orbit point to arrive there by the first TOT. The refueling point/time and the orbit point/time will be as fragged. Time on orbit will be until the last TOT or as instructed by Compress. Upon release, the helicopters will recover at Udorn. Helicopters will depart Udorn for the afternoon orbit, proceeding as outlined for the morning orbit except, when released they will recover at the normal beddown of the aircraft involved, i.e., Udorn or Nakhon Phanom. At any time helicopters are not on orbit, or enroute to and from the orbits, they will be on strip alert at Udorn.

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RESCORT (Sandy) aircraft will be fragged to accompany the helicopters on all orbit missions, and to maintain strip alert as required to provide the SAR posture necessary to support the strike forces.

Established orbit points over Laos are:

SIERRA 020-40N 104-20E Rescue helicopters

ALPHA (L-36) 019-59N 103-29E Rescue helicopters

TANGO (L-98) 019-16N 102-56E Rescue helicopters

PAK SANE 018-23N 103-40E HC-130P

Use of Laos FOL Sites; FOLs in Laos will not be utilized unless specific approval is obtained from the Commander 7th AF. If future use of these sites is authorized, operational concepts may be changed to conserve flying hours.

If required, two HH-3E's may be fragged for strip alert at Nakhon Phanom or on orbit to provide SAR/ACR coverage for the central/southern Laos area. Deployment will be determined as required.

Aerial Refueling:

All aerial refueling operations will be accomplished in accordance with ARRSM 55-4 and applicable technical orders.

Primary refueling areas will be in the vicinity of the helicopter orbit positions over Laos and the Gulf of Tonkin. The currently planned central point of the primary Laos refueling area is 1940N 10240E, and the normal refueling track will be to the north-east or southwest from this point. Adjustments will be made as necessary as a result of intelligence and/or weather. Secondary refueling areas in Laos will be in the vicinity of secure Lima or STOL sites, or as the mission dictates; and in the Gulf of Tonkin, they will be in the vicinity of USN aircraft carriers

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or helicopter refuelers, or as the mission dictates.

The inability to refuel due to in-flight conditions or malfunctioning equipment should not create an emergency situation. Adherence to the provisions of AFM 60-16 concerning the operation of aerial refuelable aircraft is required. In Laos, the fuel (plus reserve) required to reach a predetermined recovery base must always be available. In the Gulf of Tonkin, the fuel (plus reserve) to reach a predetermined USN aircraft carrier or DLG where refueling can be accomplished must always be available. In the event recovery operations cause a low fuel state due to jettisoning of drop tanks and/or extended on-scene time, the HC-130P will be positioned as close as possible to the recovery scene and will be prepared to effect immediate aerial refueling operations.

Implementation rests on 3rd ARRGp Headquarters as well as on subordinate units. The JSARC is responsible for the positioning of the rescue forces and to include in the frag order the refueling points/times and the orbit positions/times. With timely changes in the frag orders, the JSARC will be able to position the forces in strategic areas during appropriate periods of the day. After a recovery mission, the force posture will be reestablished by JSARC direction.

6. WERE THEY VALID (WHETHER USED OR NOT)?

The programming plans appeared to be valid. Even though at the time they were written they may have been, in part, based on assumptions, instead of fact, by the time the element affected by the assumption was implemented, either the assumption had become fact or the plan had been changed accordingly.

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7. WERE THEY IN AGREEMENT WITH:

a. EVENTS?

The programming plans were in agreement with events in that they were responsive to the same direction which guided the events. The original plans usually required changing prior to and during implementation in order to remain consistent with events because they originally were based, in part, on assumptions which may have contained faults as events unfolded.

A gross example of this factor was the movement of 11 HC-130P's to the 39th ARRSq in SEA. This plan (PP 583) was published in October of 1966. Prior to that time, there had been several exchanges of correspondence regarding beddown, primarily considering either placing all 11 at Udorn or splitting them between Udorn and Da Nang. The latter prevailed for some time until major problems were identified as impacting this concept. These included, primarily, facilities and SEA manpower ceilings. This started a search for a Main Operating Base (MOB) in SEA which considered at various times U Tapao, Nam Phong, Cam Ranh Bay, Don Muang, Korat, Tuy Hoa and Khon Kaen.

On 19 January 1967, PACAF was briefed by 7th AF that all 11 HC-130's would be based at Tuy Hoa but this beddown would again fall in the category of Forward Operating Base (FOB) since no C-130 phase inspection or heavy maintenance facilities were planned for Tuy Hoa or anywhere in SEA.

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Validity of the regulations and manuals, although generally acceptable, was lacking almost totally in two critical aspects.

First, in order to be prepared for wartime SAR, the necessary equipment must be developed, procured and maintained during peacetime. Emphasis should be placed on timely, peacetime development of SAR vehicles and equipment designed to provide the best possible SAR coverage for the combat force to be supported in whatever environment these supported forces are to be operated. This design effort, to be most effective, must provide SAR equipment compatible with the operational characteristics of the equipment being operated by the combat forces to be supported.

Second, in order to be prepared for wartime SAR, adequate primary SAR forces must be organized and trained for the wartime SAR mission during peacetime. Wartime SAR doctrine, tactics and techniques must be developed and documented during peacetime.

The only apparent recognition of the need to accomplish the above requisites in peacetime was that included in AFR 23-19 as part of the ARRS mission.⁴⁶ "ARRS will maintain combat personnel recovery forces for the rescue of military personnel from hostile areas according to AFR 64-3."

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This announcement again started a search for a Maintenance Support Base (MSB) outside SEA which considered Tachikawa, Chung Chang Kwan, Naha and Clark.

An ARRS letter to MAC on 21 February 1967 indicated that the bed-down of the eleven (11) HC-130P aircraft for SEA had vacillated for many months. ARRS headquarters published Programming Plan 583 on 10 Oct 1966 based on the best information available at the time. However, they fully realized that changes could be expected due to the continuous reappraisal of the situation being conducted by 7th Air Force. This was due primarily to two 7th Air Force objectives reported by the Commander, 3d ARRGp. First, was the intent to establish a single C-130 MOB in SEA, and second was the intent to beddown all longer range aircraft at rear bases so as to accomodate aircraft with shorter range or short reaction requirements at the forward operating bases (Da Nang AB and Udorn Aflld). ⁴⁷

On 15 January 1967, the 3d ARRGp advised that 7th Air Force had reached a decision to beddown the eleven (11) HC-130P aircraft at Tuy Hoa AB. On 19 January, further information was received that 7th Air Force had recommended to PACAF, in a briefing on base utilization, that all eleven (11) HC-130P aircraft be based at Tuy Hoa. However, this beddown would again fall in the category of a forward operating base since no C-130 phase inspection or heavy maintenance facilities were planned for Tuy Hoa or any other base in SEA.

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This was the first information received by this headquarters that heavy maintenance was not planned for SEA, which was a factor bearing heavily on the recommendations contained in the ARRS letter to MAC. This situation dictated a continuation of the present concept of HC-130 maintenance for SEA, i.e., all maintenance other than organizational or unscheduled maintenance to be accomplished at Tachikawa AB supported by TDY personnel from SEA.⁴⁸

Hq ARRS accepted this concept primarily because there were no alternatives and only four (4) HC-130's were involved. With the buildup to eleven (11) aircraft, the problem would become quite complex in view of the magnitude of the TDY problem and the wasted flying hours to and from Tachikawa. Flying hours expended for ferry to maintenance facilities in Japan would continue to exceed twenty percent of programmed flying hours. This was an unacceptable posture to maintain for the duration of the SEA conflict if the limited resources were to be used intelligently.⁴⁹

The ARRS proposal was to convert the 31st ARRSq at Clark AB, P.I. from four (4) HU-16's to four (4) HC-130P's in FY 2/68 (1 Dec 67) and establish this unit as the HC-130 MOB for SEA. This date was chosen as the earliest feasible date to reduce personnel impact to a minimum. Conversion of this squadron to HC-130's would result in the following advantages accruing to MAC/ARRS:⁵⁰

- (1) Reduce non-productive flying time to an acceptable level and

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provide more productive hours to SEA support.

(2) Establish a maintenance facility manned by personnel on stabilized normal tours of duty.

(3) Provide for a post-war beddown of HC-130 aircraft in place and operational at the cessation of hostilities. In addition, avoid the phase-out of fixed-wing aircraft to HH-3E aircraft only at end FY 4/68.

(4) Take advantage of the recently completed HC-130 nose dock at Clark AB. In addition, a new parking ramp was to be completed in March 1967. Both of these facilities might be lost to other C-130 operators if not programmed for HC-130's.

(5) Relieve logistic support requirements in SEA.

(6) Reduce manpower requirements in SEA thus alleviating critical manpower ceiling problems.

(7) Phase out HU-16's earlier than programmed with attendant manpower savings.

Under this concept, the 31st ARRSq would be tasked to provide all HC-130 heavy maintenance and phase inspections for the 3d ARRGp. Seven (7) in-commission aircraft per day would be provided to the 39th ARRSq at

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Tuy Hoa to meet 7th Air Force daily SAR requirements. In addition to "Crown" missions, aircraft would be further deployed from Tuy Hoa to Da Nang and Udorn to provide an on-call refueling capability for HH-3E and HH-53B operations. The 31st ARRSq would ferry the aircraft to and from Tuy Hoa; however, all aircraft in SEA would be under the command of 3d ARRGP (39th ARRSq). Some of the previously nonproductive flying hours could be used for orbit missions by the 31st ARRSq, which would be supplemented by 36th ARRSq aircraft, as required.⁵¹

ARRS discussed the above proposal with PARRC and agreed that this was the most practical and economical means of meeting the long term requirement for HC-130P aircraft in SEA. On 18 February 1967, PARRC advised that informal discussion with PACAF working staff indicated that PACAF would support Clark AB as the HC-130 MOB. The only major problem currently forecast was a possible shortage of airmen dormitory space. ARRS indicated that if MAC concurred in principle with the proposal, they would pursue a final decision to this effect and prepare detailed plans to implement at the earliest practical date.⁵²

A flurry of messages, meetings, etc., transpired the next few months without solving the two problems (operating base and support base). To provide a mechanism to push for solutions to these problems, a formalized Numbered Project was initiated in ARRS. Subsequent actions

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were summarized in several reports. The initial report, dated 23 May 1967, provided the rationale used in determining beddown location.⁵³

BACKGROUND/EVENTS: The ceiling of 4 HC-130P aircraft at Udorn and 2 HC-130P aircraft at Da Nang instigated actions to establish one centralized location in SEA for beddown of all eleven HC-130P aircraft assigned to 39 ARRSq. The 7th Air Force/PACAF have recommended the 39 ARRSq HC-130 aircraft beddown at Tuy Hoa AB, RVN. However, Tuy Hoa will be used as an operating base only, with no HC-130P heavy maintenance facilities/capability. The present practice of rotating HC-130P to/from 36 ARRSq, Tachikawa AB, Japan, for heavy maintenance cannot be continued indefinitely due to high percentage of flying time wasted for ferry. Therefore, establishing an HC-130 MSB in the proximity of the area of operations is essential. Bases under consideration for HC-130 MSB are: Clark AB, P.I., CCK AB, Taiwan and Naha AB, Okinawa. Prime consideration is being given to Clark AB, P.I., to allow collocation of the HC-130 MSB with the 31 ARRSq. A conference conducted 3-5 May 67 at 13 AF states Clark AB capable of supporting HC-130 MSB based on two and at the most three aircraft in station at any one time. Acceptance of HC-130's contingent on completion of 31 ARRSq apron.

ACTION REQUIRED: 1. Concurrence by PACAF, CINCPAC, MAC and CSAF on establishing HC-130 operating base at Tuy Hoa and MSB at Clark, or other designated HC-130P OB/MSB's.
2. Establishing logistics channels to designated MSB.
3. Programming personnel and materiel actions to establish the MSB.
4. Programming Personnel, Materiel and Operations actions to transfer 39 ARRSq HC-130P to designated operating base (Tuy Hoa).
5. Revision of 11-4 Agreement with Clark AB to include MSB support functions.

ESTIMATED COMPLETION DATE: 30 October 1967.
Predicted on 1 Sept completion/BOD of 31 ARRSq apron.

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The 1st status report, dated 15 June 1967, recommended the HC-130's be located at Tuy Hoa with the Maintenance Support Base at Clark AB.⁵⁴

EVENTS: Commander 13AF has recommended establishing the HC-130P MSB at Clark AB, Philippine Is. PACAF and MAC have concurred with the 13 AF recommendation and PACAF requested CSAF amend PD 69-2 accordingly.

CSAF amended PD 69-2 to reflect:

39 ARRSq move from Udorn AB, Thailand to Tuy Hoa AB, RVN, June 1967.

Det 1, 39 ARRSq move from Da Nang AB, RVN to Tuy Hoa AB, RVN, May/June 1967.

Movement of 39 ARRSq and Det 1, 39 ARRSq to Tuy Hoa was accomplished on 8 June 1967 IAW PACAF Movement Orders 24 & 25 respectively, dated 27 May 1967.

Det 2, 39 ARRSq (HC-130P MSB) was organized at Clark AB PI and Det 1, 39 ARRSq Tuy Hoa was discontinued on 8 June 1967 as authorized by MAC Special Order G-105, dated 24 May 1967.

7 AF has published 7th Air Force Programmed Action Directive (PAD)67-21 dated 10 May 1967. This document provides guidance and fixes responsibility for actions to be taken by tasked units and 7 AF staff agencies for the activation, support and initial operation of the 39th ARRSq at Tuy Hoa.

1 September 1967 is forecast as date when Det 2, 39 ARRSq can accept MSB responsibility, pending assignment of sufficient personnel, spares, equipment, etc.

Logistic channels have been established to Det 2, 39 ARRSq, Clark AB PI. ARMDC initiated actions through WRAMA to route HC-130P spares and AGE to Clark AB PI.

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ACTION REQUIRED:

Programming personnel and materiel actions to establish the MSB. (PARRC will formulate/publish required programming plan).

Supplement or fragment 7AF PAD 67-21 to include any items omitted pertaining strictly to ARRS.

Renegotiation of 11-4 Agreement with Clark AB to include MSB support functions.

MAC approval of Det 7 proposed manpower authorization for 39 ARRSq and Det 2, 39 ARRSq, plus manpower authorization necessary to establish an operating location or detachment (organizational and unscheduled aircraft maintenance), at Udorn.

ESTIMATED COMPLETION DATE: 1 September 1967.

The 2nd status report, dated 15 July 1967, indicated the following:⁵⁵

EVENTS:

The 39 ARRSq and Det 2, 39 ARRSq have been initially established at Tuy Hoa AB, RVN and Clark AB, PI respectively. 7th Air Force Programming Action Directive (PAD) 67-21 and PARRC Programming Plan 68-1 have been published to program all time phased actions and responsibilities related to fully establishing 39 ARRSq and Det 2 at the designated locations.

Initial progress reports have been received from 7th Air Force and PARRC. All programmed time phased actions are progressing as scheduled.

ACTIONS REQUIRED:

Monitor completion of programmed time phase actions.

Provide assistance through Hq. staff agencies to resolve problem areas if and when required.

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ESTIMATED COMPLETION DATE: 1 September 1967

DATE OF NEXT REPORT: N/A. The basic problem of determining the OB and MSB locations has been resolved, and the establishment of the 39 ARRSq and Det 2 has been adequately programmed and is being accomplished on schedule. Actions relative to the establishment of this posture are now a matter of routine Hq. staff actions.

As can be seen by the above, resolution of the basic problem, beddown location for the aircraft, people and equipment, was not completed until after the actions scheduled in the programming plan were to have been completed.

b. CONCEPTS AND DOCTRINE? As was evidenced in the foregoing discussion, in some instances the basic concept was not always resolved at the time the programming plans were published. In those instances, this could, and on occasion did, result in an initial disagreement between the plan and the concept. This required the managers of the plan to be flexible and responsive to changing concepts in order to resolve the discord. There was no apparent disagreement with doctrine either in the programming plans or the directive documents.

c. EACH OTHER? Other than those differences occasioned by changes after the fact there appeared to be no disagreement among the documents. These differences were resolved in subsequent changes to the documents.

d. INTER/INTRA SERVICE? Other than as discussed above, there

appeared to be no inter/intra service disagreement.

8. HOW DID ORGANIZATIONAL, COMMAND AND CONTROL ARRANGEMENTS

INHIBIT OR ENHANCE THE ACCOMPLISHMENT OF THE TASK? Volume I,

pages 109 through 114, discussed in some detail a problem in the area of operational control. The points at issue were subsequently clarified in re-issue or change of the directives to the form discussed above thus eliminating the problem. This problem could have been interpreted as inhibiting the accomplishment of the task but the inhibition must have been considered as slight and, of course, only temporary in nature.

9. ADDITIONAL CONSIDERATIONS: None.

10. SUMMARIZE LESSONS LEARNED:

a. By the end of this time period, all pertinent SAR directives recognized, to varying degrees, the specialized nature of wartime SAR as compared to peacetime SAR. However, they did not all specifically nor strongly point out the nature of these differences in sufficient detail to provide the guidance necessary to ensure understanding.

b. The joint directives, although recognizing in most cases, the need for specialized training and equipping for the wartime SAR mission, did not specify that these needs be satisfied during peacetime in order to be ready for the wartime mission when the necessity arose.

c. Wartime SAR concepts and doctrine were well developed and were being adequately documented by the end of this time period; however, such development and documentation was badly needed earlier, in fact, all through the period.

d. Even though JCS Pub 2 and other joint SAR directives specified that each Service participating in the JSARC provide sufficient personnel to ensure adequate manning of the component SAR controller position, this was not being done. Thus the JSARC was not able to function as a truly joint operation as directed.

11. SUMMARIZE CONCEPTUAL AND DOCTRINAL RECOMMENDATIONS:

The conceptual and doctrinal recommendations listed below, subparagraphs a through d, generally support, in the same alphabetical order, the lessons learned that have been listed above:

a. Doctrinal publications should describe the nature of wartime SAR as it differs from peacetime SAR in sufficient detail to ensure understanding at all levels. They also should provide sufficient guidelines to ensure sound planning and adequate preparation at all echelons of all Services concerned.

b. Concepts and doctrines must clearly and specifically provide for the manning, equipping and training during peacetime of adequate SAR forces to prosecute successfully the wartime SAR mission.

c. Comprehensive wartime SAR conceptual, procedural and organizational documents should be developed, insofar as practicable, during peacetime. Specific area conflict applications should be promulgated as early as possible after the onset of hostilities.

d. The basic JCS doctrine concerning adequate joint manning of the JSARC should be complied with or relief from its provisions should be obtained.

PLANS, CONCEPTS, AND DOCTRINE ANALYSIS
1965 - 31 March 1968

FOOTNOTES

1. Air Force Regulation 64-3, 31 May 1967.
2. Air Force Manual 2-36, 3 Jan 1967.
3. Air Force Regulation 23-19, 14 March 1967.
4. Commander in Chief, Pacific Instruction 31302. B.
5. Pacific Air Force Regulation 55-90.
6. Pacific Air Force SAR Plan 120-67.
7. Pacific Air Force Regulation 55-90/13 AF Supplement 1.
8. 2d Air Division Regulation 55-20.
9. 7 AF Regulation 64-2.
10. 7 AF Manual 64-1.
11. ARRS Programming Plan 568, Apr 65, p.1.
12. ARRS Programming Plan 571, Nov 65, p.1.
13. ARRS Programming Plan 574, 15 Dec 65, p.1-2.
14. ARRS Programming Plan 575, 15 Dec 65, p.1-2.
15. ARRS Programming Plan 571A, May 66, p.1.
16. ARRS Programming Plan 580, May 1967, p.1-2.
17. ARRS Programming Plan 583, 10 Oct 66, p.2.
18. ARRS Programming Plan 582, Dec 66, p.iii.

PLANS, CONCEPTS, AND DOCTRINE ANALYSIS

1965 - 31 March 1968

FOOTNOTES

1. Air Force Regulation 64-3, 31 May 1967.
2. Air Force Manual 2-36, 3 Jan 1967.
3. Air Force Regulation 23-19, 14 March 1967.
4. Commander in Chief, Pacific Instruction 31302. B.
5. Pacific Air Force Regulation 55-90.
6. Pacific Air Force SAR Plan 120-67.
7. Pacific Air Force Regulation 55-90/13 AF Supplement 1.
8. 2d Air Division Regulation 55-20.
9. 7 AF Regulation 64-2.
10. 7 AF Manual 64-1.
11. ARRS Programming Plan 568, Apr 65, p.1.
12. ARRS Programming Plan 571, Nov 65, p.1.
13. ARRS Programming Plan 574, 15 Dec 65, p.1-2.
14. ARRS Programming Plan 575, 15 Dec 65, p.1-2.
15. ARRS Programming Plan 571A, May 66, p.1.
16. ARRS Programming Plan 580, May 1967, p.1-2.
17. ARRS Programming Plan 583, 10 Oct 66, p.2.
18. ARRS Programming Plan 582, Dec 66, p.iii.

(PLANS, CONCEPTS, AND DOCTRINE ANALYSIS)

19. AFM 2-36, 3 Jan 1967, op. cit.
20. AFR 23-19, 14 March 1967, op. cit.
21. AFR 64-3, 31 May 1967, op. cit.
22. Commander in Chief, Pacific Instruction 3130.1C.
23. CINCPAC INST 31302.B, op. cit.
24. PACAFR 55-90, op. cit.
25. Ibid.
26. PACAFR 55-90/13 AF Supp 1, op. cit.
27. 2d ADR 55-20, op. cit.
28. 7 AFR 64-2, op. cit.
29. 7 AFM 64-1, op. cit.
30. AFR 64-3, 31 May 1967, op. cit.
31. Ibid.
32. AFR 23-19, 14 March 1967, op. cit.
33. Ibid., p. 3.
34. AFM 2-36, 3 Jan 1967, op. cit., p. 8.
35. CINCPAC INST 3130.2B, op. cit.
36. CINCPAC INST 3130.1C, op. cit.
37. PACAFR 55-90.
38. PACAF SAR Plan 120-67, op. cit.
39. 7 AFR 64-2, op. cit.

(PLANS, CONCEPTS, AND DOCTRINE ANALYSIS)

40. 7 AFM 64-1, op. cit.
41. 3d ARRGp Programming Plan 1, Nov 67, p. 1.
42. Ibid., pp. C-2 thru C-5.
43. Ibid.
44. Ibid.
45. Ibid.
46. AFR 23-19, 14 March 1967, op. cit.
47. Ltr, Hq ARRS (ARCCO) to Hq MAC (DCS/Plans), Subj: HC-130
Bed-down for SEA Operations (U), 21 Feb 1967.
48. Ibid.
49. Ibid.
50. Ibid.
51. Ibid.
52. Ibid.
53. Initial Report, ANP-67-02-XDC (HC-130P Operating Base (OB)/
Maintenance Support Base (MSB), 23 May 1967.
54. 1st Status Report, ANP-67-02-XDC (HC-130P Operating Base (OB)/
Maintenance Support Base (MSB), 15 June 1967.
55. 2nd Status Report, ANP-67-02-XDC (HC-130P Operating Base (OB)/
Maintenance Support Base (MSB), 15 July 1967.

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GLOSSARY

ACR - Aircrew Recovery
ADR - Air Division Regulation
AFM - Air Force Manual
AFR - Air Force Regulation
AFSC - Air Force Specialty Code
AFSD - Air Force Supply Directive
AGE - Aerospace Ground Equipment
AGL - Above Ground Level
AMC - Airborne Mission Commander
AOC - Air Operations Center
ARS - Air Rescue Service
ARRGp - Aerospace Rescue and Recovery Group
ARRS - Aerospace Rescue and Recovery Service
ARRSq - Aerospace Rescue and Recovery Squadron
BASO - Base Supply Officer
BDHI - Bearing-Distance-Heading Indicator
BOQ - Bachelor Officer Quarters
CBPO - Consolidated Base Personnel Office
C&E - Communications and Electronics
CFS - Contractor, Field Services

(Glossary - continued)

CINCPAC - Commander in Chief, Pacific

CINCPACINST - CINCPAC Instruction

COMPRESS - Call Sign, Udorn

COMSEVENTHFLT - Commander, Seventh Fleet Instruction

CONUS - Continental United States

CROWN - HC-130 Rescue Control Aircraft

DEADLOCK - Huey Gunship Call Sign

DF - Direction Finding

DM - Director of Maintenance

DMZ - Demilitarized Zone

DOD - Department of Defense

ECM - Electronic Countermeasure

E&E - Escape and Evasion

FOB - Forward Operation Base

FOD - Foreign Object Damage

FOL - Forward Operating Location

GFAE - Government Funded Avionics Equipment

HARBOR MASTER - Call Sign, Navy Carrier Task Group

HF - High Frequency

HOBO - A1E Aircraft Call Sign

(Glossary - continued)

IFF - Identification Friend or Foe

IRAN - Inspection and Repair as Necessary

JATO - Jet-Assisted Takeoff

JCS - Joint Chiefs of Staff

JOLLY GREEN - Call Sign for HH-3 and HH-53

JSARC - Joint Search and Rescue Center

KING - Call Sign, JSARC

LBR - Local Base Rescue

LOX - Liquid Oxygen

MAC - Military Airlift Command

MACV - Military Assistance Command, Vietnam

MAF - Marine Amphibious Force

MATS - Military Air Transport Service

MAWg - Military Airlift Wing

MOB - Main Operating Base

MOL - Manned Orbiting Laboratory

MSB - Maintenance Support Base

NASA - National Aeronautics Space Administration

NAVFORVINST - Naval Forces Vietnam Instruction

NCO - Non-Commissioned Officer

(Glossary - continued)

NORM - Not Operationally Ready, Maintenance

NORS - Not Operationally Ready, Supply

NORS-G - Not Operationally Ready, Grounded

NORTHBROOK - Marine Aircraft Call Sign

NVN - North Vietnam

NWPSUPP - Navy War Plans Supplement

OJT - On-the-Job Training

OL - Operating Location

OR - Operationally Ready

OSC - On-Scene Commander

PACAF - Pacific Air Force

PACAFR - Pacific Air Force Regulation

PACOM - Pacific Command

PAD - Program Action Directive

PAE - Port of Aerial Embarkation

PARC - Pacific Air Rescue Center

PARRC - Pacific Aerospace Rescue and Recovery Center

PCP - Program Change Proposal

PCS - Permanent Change of Station

PDS - Personnel Data System

(Glossary - continued)

PP - Programming Plan

PSP - Pierced Steel Planking

QUEEN - Call Sign of RCC at Son Tra

RCC - Rescue Control Center

RESCAP - Rescue Combat Air Patrol

RESCORT - Rescue Escort

RVN - Republic of Vietnam

SAC - Strategic Air Command

SANDY - A1E Aircraft Call Sign

SAR - Search and Rescue

SARTF - Search and Rescue Task Force

SATS - Specialized Aircrew Training School

SEI - Special Experience Identifier

SPAD - A1E Aircraft Call Sign

TAC - Tactical Air Command

TCTO - Time Compliance Technical Order

TDY - Temporary Duty

TOT - Time Over Target

UDL - Unit Detail Listing

UHF - Ultra High Frequency

(Glossary - continued)

UN - United Nations

UNAAF - Unified Actions ~~A~~ Armed Forces

UMD - Unit Manning Document

USAFMPC - United States Air Force Military Personnel Center

VNAF - Vietnamese Air Force

WRM - War Readiness Materiel

WRAMA - Warner Robins Air Materiel Area

Some unreadable pages - Poor original!

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PREV EDIT WILL BE USED